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A comprehensive survey of various facets of the American high school is presented. Main areas are: (1) An overall picture of the American high school which includes information on such characteristics as school practices, policy, school plant, principal and teaching staff, and community characteristics. (2) A guidance counseling service picture which includes: results from a guidance questionnaire; and an evaluation of counseling and guidance policies and practices, facilities available, and professional preparation of the staff. (3) A system for classifying public high schools into groups of comparable schools, which includes comparisons showing the major differences among the groups. (4) The use of tests which includes results of a survey of the types of tests used in different types of senior high schools and the purposes for which used. (5) The relationship of school and community characteristics of aptitude and achievement tests. And (5) The relation of school practices and characteristics to educational outcomes.

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MONOGRAPH SERIES
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Studies of the American High School

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PROJECT TALENT

PROJECT TALENT MONOGRAPH SERIES

Monograph No. 2

Studies of the American High School

John C. Flanagan
John T. Dailey
Marion F. Shaycoft
David B. Orr
Isadore Goldberg

December 1962

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PREFACE AND ACKNOWLEDGMENTS

This monograph, the second of the Project Talent Monograph Series, contains a detailed report of the first results of Project Talent, findings about American high schools. While members of the staff of Project Talent have reported some portions of these data at the meetings of several professional societies, most that is contained in this report is being presented for the first time. Later monographs in this series will present further results and analyses, particularly with reference to the American high school student and his post-high school activities.

The idea behind Project Talent dates back many years, but the immediate beginning of the Project was the submission by Dr. John C. Flanagan of a proposal entitled,"An Inventory of the Aptitude Resources Available for the Nation's Needs in Professional, Technical, and Public Service Fields", on 27 February 1957. This proposal was submitted to representatives of government agencies and professional groups, and the Cooperative Research Program of the U. S. Office of Education agreed to provide most of the funds for Project Talent. Other interested groups which assisted in the support of the study were the National Institute of Mental Health, the Office of Naval Research, and, in the planning phases, the National Science Foundation. Complete information about the planning and developmental phases of the study has been reported in Monograph No. 1, of this series, "Designing the Study."

From its inception Dr. John C. Flanagan, Professor of Psychology at the University of Pittsburgh and President of the American Institute for Research, has been the Responsible Investigator for the study. Dr. John T. Dailey of the University of Pittsburgh and a member of the technical staff of the American Institute for Research has been the Program Director since June 1958. The present members of the professional staff who have taken major responsibility for various aspects of the program over the last several years include: Marion F. Shaycoft (Director for Measurement Research), David B. Orr (Director for School and Survey Research), Isadore Goldberg (Supervisor for Manpower and Guidance Research), Clinton A. Neyman, Jr. (Supervisor for Services), George R. Burket (Director for Data Bank Research), Glenn E. Roudabush (Director for Analytical Research), Gary Lotto (Computer Consultant), Stuart E. Sherman (Statistical Supervisor), and Louise O. Umstott (Administrative Associate). The secretarial and clerical staff who have assisted in the

preparation of this manuscript includes: Mercedes M. Cook, Clara I. Garrido, Janice Gordon, Shirley M. Hall, Miriam G. Kinsey, Solveig M. Morgenstierne, Sara K. Weinstein, and Miriam H. Zeitchik. Former members of the Project Talent staff who have also contributed to the Project are Dr. William A. Gorham and Dr. Dan J. Sillers.

Clinton A. Neyman, Jr. participated in all phases of the preparation of the manuscript. He was also responsible for the editing of the final draft and the preparation of the text for the printer, in which he was assisted by Louise O. Umstott.

The Project staff is particularly indebted to William B. Kehl, Director of the Computation and Data Processing Center at the University of Pittsburgh, for his cooperation and assistance.

The Project Talent staff also wishes to acknowledge the helpful advice and assistance of Dr. Kenneth Oberholtzer, Chairman, and the current members of the four Advisory Panels all of whom have contributed greatly to the success of the project:

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Chapter 1

PROJECT TALENT STUDIES THE AMERICAN HIGH SCHOOL

A. Introduction

Americans today are vitally concerned about the quality of their schools. Our high schools are under attack from several quarters. It has been implied by some that our schools are inferior to those of other nations. Some critics say we are changing too fast; others that we are not changing fast enough. Our educational methods, curricula, and policies must be re-examined to meet the many challenges of the modern space age. Change is inevitable. Innovation and experimentation in our high schools are already under way. However, there is much controversy and confusion. Which direction should the changes take? Some voices insist that larger schools will provide the answer. Others stress smaller classes as the important factor. Many groups are very busy developing new curricula, while others are insisting that the answer is to revert to basic education, eliminate "frills", and lower school taxes.

Indeed, there is lack of a clear idea of what to change, since there is not sufficient detailed information regarding the educational practices and policies being changed. We urgently need the sort of census information about our schools that is taken for granted in business, labor, agriculture, and other important segments of our economy and society. There has not been adequate knowledge about the important characteristics of our American high schools. A comprehensive study in depth of a representative sample has been needed. Information has been required to determine the frequency and interrelationships of such important school factors as number of students, class size, expenditure rate, track system, number of books in the library, guidance and counseling programs, salary level, and faculty experience, to mention but a few.

All of this intense concern with re-thinking the role and structure of education in our democratic society is set against the backdrop of rapidly evolving world change. Science and technology are developing at an accelerating pace. Man is beginning his exploration of space at the same time that many new nations are emerging and some of the old nations are rapidly raising their standards of living and productivity to the point where poverty could be eliminated and a good life shared by all. Simultaneously, nations maneuver on the brink of war, and poverty, disease, and injustice exist alongside the space ship and intercontinental ballistic missile. The advancement of science and technology has become recognized as important to national survival, and education is seen as an essential foundation for this. At the same time, it is becoming increasingly recognized that education in the humanities is equally important to our national welfare and to the solution to our problems.

B. Historical Setting

American secondary education with its multi-billion dollar budget and its millions of students has come a long way since its early beginnings. In 1635, the Boston Latin Grammar School was established. The Latin Grammar School then was a preparatory school for college, and was somewhat similar to the present-day academic high school. Benjamin Franklin in 1752 established a new type of school, which became known as an academy. Its purpose was vocational training and practical preparation for a life of usefulness in society, government, occupation, and professional service. Girls attended the academy as well as boys. Needlework was offered as a course as well as English, mathematics, French, modern and ancient history, natural philosophy, bookkeeping, surveying, and elocution. The academy was a transitional school in the development of our present school systems, and it brought about a greater variety in course offerings. It served a larger segment of the population than the Latin Grammar School.

In 1821, Boston established a committee to look into the needs of education and it was found that the Latin Grammar School did not meet the needs of the time. A high school for boys was established, and a few years later a high school for girls followed. The high school spread rather slowly from its first beginnings in Boston until after the Civil War. The establishment of high schools was not always easy, for there was definite opposition to them. Often the arguments used were that the common school laws of the day could not be stretched to include the support of a high school education and that elementary education was all that the public was obliged to supply. Legal proceedings were started to prevent school districts from spending public funds on high schools. However, in 1874 a decision made by the Michigan Supreme Court set a precedent which was followed in many of the newer states in the Midwest. In this decision, Chief Justice Cooley stated that the support of common schools could be extended to include the higher levels of instruction, even college-preparatory courses, if the people of the local district wanted this.

In 1870, there were approximately 500 high schools. By 1890, the first year the U.S. Bureau of Education collected such statistics, there were 2526 high schools. Table 1-1 shows the trend in the growth of American high school enrollment. The development of the public high schools made further education available to an even greater number of the school age population. The curriculum became quite comprehensive, including both the college-preparatory courses of the grammar school and the functional courses of the academy.

In 1891, the National Education Association established a Committee of Ten, which made a report to the 1893 NEA General Assembly. President Eliot, of Harvard, was chairman. The committee was made up mostly of college presidents and professors. The basic report of this committee was

Table 1-1

U.S. Public High School Enrollments, 1890 - 1970

Year	High School Enrollment			Per Cent of Population Ages 14-17
	Boys	Girls	Total	
1890	85,943	117,020	202,963	3.8
1900	216,207	303,044	519,251	8.4
1910	398,525	516,536	915,061	12.7
1920	821,015	1,030,950	1,851,965	23.9
1930	1,986,246	2,148,925	4,135,171	44.3
1938	2,852,539	3,074,183	5,926,722	59.8
1946	2,615,658	2,801,464	5,417,122	60.9
1952	2,785,553	2,909,961	5,695,514	65.3
1956	3,121,000	2,999,000	6,120,000	64.2
1960*			8,620,215	70 (estimated)
1970*			9,412,025	75 (estimated)

Note.--Data for 1890 to 1952: Gaumnitz, Walter H. "Statistics of Public Secondary Day Schools 1951-52." In U.S. Office of Education Biennial Survey of Education in the United States, 1950-52. GPO, 1954. Ch. 5. Data for 1956: U.S. Bureau of the Census. Current Population Reports, Population Estimates. Series P-25, No. 146. GPO, 1956, 17 pp.

*Based on births 14 years earlier and estimated percentage in school, with mortality rate considered at 33 per 1000 up to the age of 14, and with adjustments made for under-registration.

that the chief purpose of high schools should be the preparation of pupils for college.

The Committee of Ten and similar committees have had a great influence upon the American high school and its curriculum. Until almost 1920, the high school in America accepted as its purpose the preparation of pupils for college. Many of the schools tended to narrow their programs down from the old academy's practical subjects in order to meet the requirements of colleges so that their students might enter these institutions upon graduation. A committee of the Carnegie Foundation gave even greater standardization to the American high school, by proposing unit values for courses. These units were adopted by 1909. A course was to be valued as one Carnegie unit when taught five class periods a week for a full year. Colleges were to require at least 15 of these units for entrance. The Carnegie unit still plays an important part in high school curricula and in the requirements for admission to college.

The Morrill Act of 1864 gave land-grant assistance for the development and establishment of colleges for agriculture and the mechanical arts. This naturally created a demand for the founding of high schools for the same purposes and led later to a movement for the establishment of vocational high schools.

A Presidential Commission reported in 1914 in favor of federal aid for a national system of agricultural, vocational, and trade schools, and continued interest ultimately led to passage of the Smith-Hughes Bill of 1917. In this bill, financial assistance was given to individual states for these special programs, but the control and development of such programs was left to the individual states. In succeeding years, Congress passed additional legislation expanding vocational education to home economics and business education, and provided additional federal support for these programs. Although Congress has given financial assistance to vocational education through the Smith-Hughes Act and other laws, a separate system of vocational education did not develop to the extent expected. The high school benefited most from these federal finances by becoming even more comprehensive in curriculum.

The Modern High School

The Committee of Nine on Articulation of High School and College was established by the NEA in 1910. In its report, which was made in 1911, it was recommended that the high school maintain a common core of studies consisting of eleven units. This would allow four units for special interests of the individual students. The NEA Commission on Reorganization of Secondary Education rejected college preparation as the sole or even primary objective of the high school. The thinking of the commission was that high schools should prepare a person in these seven areas: (1) health, (2) command of oral and written expression, arithmetic, and reading, (3) home membership, (4) vocation, (5) citizenship, (6) use of leisure, and (7) ethical character.

The year 1930 brought the formation of the Commission on the Relation of School and College of the Progressive Education Association. This Commission tried to free secondary schools from the strong influence of college entrance requirements, and the result of this was the eight-year study (1933 through 1941). Findings of this study indicated that in general the young people from 30 schools who had been exempted from the prescribed college program did as well in college as the students from the more traditional schools. The study also indicated that these students tended to show more drive, intellectual curiosity, aesthetic interests, and other desirable characteristics.

Since the end of World War II, interest in quality of education has grown tremendously, as shown by the number of curriculum study committees made up of lay public as well as professional educators. New approaches to mathematics, the language laboratory approach to foreign language instruction, educational television, teaching machines and programed learning, and improved science facilities have resulted from the concern and interest generated by the public. This interest has been increasingly evident from the amount of attention given to education by radio, television, newspapers, and popular magazines, as well as in Congress. It has resulted in financial support by the federal government through the National Defense Education Act of 1958 and local support by matching funds. There appears to be a growing movement toward higher academic standards and at the same time more vocational and skill training for the less academically endowed.

There has been a great growth of extra-curricular activities and student personnel services (i.e., such areas as health services; psychological services; remedial programs; speech, hearing, and reading clinics; and counseling and guidance services). The National Defense Education Act has done much to stimulate and improve the availability of guidance and testing facilities and personnel in American high schools.

Secondary Education in Other Countries

In recent years much public attention has been directed to secondary education in other countries and many criticisms have been voiced of American education as contrasted with education in other countries. On the other hand, many maintain that in most respects secondary education in this country is superior to that in other countries.

In order to understand the issues involved in the American secondary education system, it is valuable to have some understanding of the history and status of some of the other European countries. In general, European secondary schools are quite different from American schools in that a far smaller proportion of their youth attend secondary schools. In many countries no more than 15 per cent of the youth of suitable age are admitted, and in many cases admission is based on examination. In the Soviet Union there is compulsory education until about age 15 or the 10th grade. After the 7th grade about half of the students are diverted to schools of a primarily vocational or practical nature. After graduation from the senior secondary school there is a great deal of further differentiation. Graduates attend a great variety of technical schools, institutes, academic schools, vocational schools, and universities. Admission to these schools is usually a highly selective process.

In England, the Education Act of 1944 established compulsory secondary education for all English children through the age of 15. At age 11 students are given an examination, called the "11-plus", to determine their scholastic aptitude. The type of secondary school that they are permitted to enter is based on this test. There are various types of secondary schools. The grammar school provides a high level six- or seven-year academic college-preparatory program. Admission is by qualifying examination only. The technical school is a second type of secondary school, which prepares youth for a variety of technical and skilled trades. It usually has a five-year program and admission to these schools is also selective. The secondary modern school is the third type of secondary school; it is designed for students who do not qualify for either of the other types or who do not want it. It offers general academic work plus some practical occupational courses not of a high technical skill level.

In all of the other nations of Europe, secondary education is still available only for a small minority of their youth and is ordinarily highly academic in nature. However, in recent years, there has been a considerable measure of reform in the direction of meeting the educational needs of a larger portion of their youth.

Table 1-2 shows data on world populations and school enrollments for the United States and 24 other countries.

Japan, Belgium, The Netherlands, and the United Kingdom, like the United States, have relatively high proportions of their populations enrolled in secondary Schools.

C. Past Studies Evaluating Secondary School Programs

Studies of School Programs

There have been relatively few studies of a comprehensive nature in which secondary school programs have been evaluated through research studies. One such early study, known as "The Eight Year Study", was launched in the fall of 1933. This study was sponsored by the Commission on the Relation of School and College of the Progressive Education Association. Three hundred colleges and universities cooperated in this study. Thirty experimental schools were included. The two purposes of the study were to establish relationships between school and college that would encourage reconstruction in the secondary school, and to discover ways in which secondary schools could serve youth more effectively. The thirty experimental schools developed many new curriculum designs and instituted many programs of a markedly different nature from conventional college-preparatory curricula. The primary goal of the evaluation was to discover how curriculum changes in experimental schools affected success in college. A group of 1475 graduates of the experimental schools were matched on the basis of several

Table 1-2

World Populations and School Enrollments

Country	Population (thousands)	Elementary School Enrollment (thousands)	Secondary School Enrollment (thousands)	Higher Education Enrollment (thousands)	Higher Ed. Enrollment per 100,000 Population
Asia					
Afghanistan	12,000	78	19	½	4
Burma	18,304	174	15	4	21
India	356,891	1,639	231	397	111
Japan	83,200	11,429	7,319	421	500
Europe					
Belgium	8,639	826	530	23	262
Denmark	4,271	415	184	18	417
France	41,900	5,545	983	154	365
Italy	46,272	4,640	1,111	152	328
Netherlands	10,114	1,271	578	36	353
Norway	3,265	338	108	6	183
Spain	28,515	2,752	347	81	293
Sweden	7,017	628	271	18	249
Switzerland	4,700	470	93	16	338
United Kingdom					
England and Wales	42,939	4,281	2,007	68	156
N. Ireland	1,360	193	62	2	173
Scotland	5,169	562	240	15	294
North America					
Canada	13,893	2,084	415	74	542
Mexico	25,581	2,712	166	36	138
United States	150,697	20,982	6,453	2,659	1,783
South America					
Argentina	17,193	2,120	168	79	462
Brazil	52,645	5,092	620	38	72
Chile	5,842	722	135	10	167
Colombia	11,260	808	80	12	99
Peru	8,405	1,014	80	13	154
Venezuela	4,986	261	38	7	129

Note.- From United Nations Educational, Scientific and Cultural Organization. *World Survey of Education.* Nevers, France: Fortin, 1959.

variables with graduates of conventional schools. The results of this study were summarized in a volume by Aikin (1942). His book reports among other things that graduates of the experimental schools made slightly higher scholastic records in all areas with the exception of foreign languages. It was also reported that they tended to demonstrate more resourcefulness in new situations, to earn more non-academic honors, and to be somewhat better oriented occupationally. Some relationship was also reported between the degree to which the experimental schools experimented and the results obtained.

In 1936, Wrightstone reported on the appraisal of the results of new curriculum and instructional practices in several metropolitan secondary schools. The experimental schools were compared with conventional schools in terms of measures of intellectual factors and achievement, measures of such factors as attitudes and beliefs, and records of self-initiated activities and cooperative activities. Many positive results were shown in which the experimental schools excelled over the control schools.

The State of New York has carried out a very comprehensive study of the qualities and abilities of students who leave secondary schools. This has been reported in a book by Spaulding (1938). In 62 general high schools an appraisal was made through tests, interviews, and other techniques of the characteristics and achievements of students leaving the school. These data were related also to instructional practices in the schools. Schools were compared whose students made relatively high achievement records as opposed to those schools where the students had low achievement records.

Follow-Up Studies of Individual Students

A number of other longitudinal studies have involved the follow-up of students who had been extensively tested and studied. Among the more prominent of these is the Harvard Growth Study. This study was initiated by Dearborn in 1922. In it a large number of school children were given mental and physical tests each year between grades 1 and 12. Terman and his associates also carried out a follow-up study of the thousand gifted students who had been first studied in California in 1916. These students are still being studied 35 years later.

D. Project Talent Studies of the American High School

The Project Talent sample of 1353 American secondary schools offers an unparalleled opportunity to study the American high schools in all of their diversity. Since the number of schools in the sample is adequately large, it is possible to divide the sample into meaningfully similar types of schools and collect statistics on them separately. Thus, normative and census data can be available not only for the average American high school, but also for each of the separate types of American high school. In addition to these descriptive studies of the American high school, it has also been possible to carry out studies to relate the characteristics of the schools to measured outcomes in terms of the achievement and performance of the graduates of these schools. This makes possible studies of an evaluative nature that could not have been made before in the absence of such an adequately large and representative sample of American high schools. A complete list of the senior high schools on which this study is based is given in Appendix B.

In order to determine how well the American high school seems to be meeting its objectives, the schools must be studied from several different points of view. We must not only determine what our schools are doing, but we must also relate what they do to what they accomplish. This involves comparing school procedures with school outcomes. We need to compare the student scholastic achievement, for example, for large and small schools, high and low expenditure schools, large class and small class schools, schools with high and low teacher salaries, schools in different parts of the country, city and rural schools, huge city and medium size city schools, and many other kinds of schools. We also need to compare schools with various combinations of the above characteristics.

Can Schools Really be Compared?

The question always arises as to whether schools really can be compared with each other. It is sometimes stated vehemently that it is impossible to compare one school with another because too many special factors are involved. This is certainly true in regard to simple comparisons where achievement in one school is compared with achievement in another, or when national norms are applied to a specific school. Perhaps one school might be in the bottom quarter and another in the top quarter of schools in scholastic achievement, and yet they might be doing an equally effective job when factors affecting the ability level of the students are properly considered.

How School Outcomes are Measured

Many important school outcomes were measured or documented at the time the Project Talent tests were administered. In addition to a comprehensive group of educational and occupational aptitude tests, the battery of tests included measures of mathematics and English achievement, reading comprehension, and information in such areas as physical science, biological science, social studies, and literature. Each school principal also provided a report of such things as the college entrance rate, absentee rate, dropout rate, and delinquency rate for his school. While these tests and reports do not cover all the objectives of the schools, they do represent some of the most important measures of the effectiveness of school programs and practices.

Situational Factors Must be Considered

It is not possible to make meaningful comparisons of outcomes in schools unless the important situational factors are known and considered. The Project Talent studies indicate that, in regard to scholastic outcomes such as achievement, school retention, and college attendance, the most important situational factors can be incorporated into a classification scheme which will yield 17 homogeneous groups of public senior high schools. One of these groups contains all of the vocational high schools. The other 16 groups are based on combinations of region, size of town or city, and the quality of housing in the area served by the schools. In addition to national norms, separate Project Talent test norms are to be made available for each type of school. Thus, a school in an underprivileged area in a large city, which is in the bottom quarter of schools nationally, might be in the upper ten per cent of schools of its type. Conversely, a high performing school in an urban residential neighborhood might be in the lowest ten per cent of schools of that type.

How School Practices Can be Evaluated

How may the effectiveness of a single school characteristic or practice such as school size or expenditure level be evaluated? The answer is by comparing measures of important outcomes for groups of schools matched in such a way that they are similar except in the one aspect being evaluated. One efficient way to accomplish this is to plot the "treatment" variable, such as the size of senior class, against the "outcome" variable, such as overall English achievement level, for each of the 17 groups of schools. Each point in such a graph will represent the size of the senior class versus the mean English score for Grade 12. For instance, a graph of this sort presented in Chapter 10 suggests that there is little relationship between class size and English achievement when the important situational factors are held constant. On the other hand, another such graph indicates that English achievement is closely related to average score on the Abstract Reasoning Test, which is a non-verbal test of scholastic aptitude. This suggests that it may be profitable to hold the Abstract Reasoning Test score constant in evaluating English achievement and, as will be shown later, in evaluating many other school outcomes.

One good way to evaluate the relative excellence of a given school or group of schools on a given achievement test is to plot the school's average score on the achievement test versus average score in Abstract Reasoning and compare the results with those for the other schools of its type. The same can be done for other pairs of tests, such as Reading Comprehension and Intermediate Mathematics, to see if the school is relatively stronger in one area than another.

There is No Single Measure of Excellence

It should be emphasized that there seems to be no single measure of excellence of school outcomes. The schools have many objectives and some are relatively intangible and difficult to document or measure. A school may be strong in spelling and relatively weak in science. Or it might have a relatively high college attendance rate but be less effective in its retention rate. A school might even conceivably be relatively low in all of the measurable outcomes and high in all of the intangible outcomes, although this does not seem likely. It should be emphasized that a school cannot be evaluated _as a whole_, but that its specific practices and characteristics can be evaluated in terms of their contributions to _each_ of the schools' desired outcomes.

Many Factors Affect School Achievement

As will be shown later, a school's performance on such a test as mathematics achievement is a result of a number of different factors all interacting with each other. How may one estimate the relative importance of such factors as school size, size of class, per-pupil expenditure, teacher salary level, teacher experience, size of library, quality of housing, family income, homogeneous grouping, and the like? This can be done by analyzing 50 such factors at a time in relationship to school performance on each school outcome in turn. A number of such studies are reported later. It is possible to estimate the relative percentage that each factor contributes to predicted performance when the contributions of all 50 factors are simultaneously studied.

Many Factors Must be Studied Simultaneously

Only by means of studying large groups of these factors at the same time will it be possible to make meaningful estimates of the unique contribution of each item to the performance measure. Studying one factor at a time can be, and nearly always is, highly misleading. For example, school size is related to many important school outcomes only because it is highly related to such factors as rural-urban status and region. When these factors are held constant, school size is no longer significantly related to many important school outcomes. On some other outcome measures school size is a significant unique factor. This points up the principle that one cannot evaluate effectiveness of a school characteristic in simple black-and-white terms. Each such factor contributes to many school outcomes and its contributions are a mixture of plus, zero, and minus effects.

We Need Bench Marks for Achievement

In the quest for greater excellence in our schools, it is essential that we have some bench marks for evaluating school outcomes. These will not be "standards" in any sense! Our "standards" are and should be the highest possible performance in each school according to school outcomes planned locally. There should be no conflict between this and the use of selected "measuring sticks" by each school to compare itself with other similar schools as well as with all schools nationally.

If we are to profit maximally from the current wave of re-examination and innovation in our schools, we must have some simple ways for the schools to determine whether the re-examination and innovation are helping them to achieve their objectives. One of the objectives of Project Talent in support of this is to provide bench marks and normative data for comparable groups of schools. New, more effective practices should result in a significant rise in the relative position of a school in relation to the other schools similar to it. A school may rise from the bottom quarter of its group to the top quarter. This would indicate an effective program even if the school were still below the national average.

E. Treatment Effects in Education and How to Detect Them

The measurable effects of different types and amounts of educational treatment are analogous to the general phenomenon of treatment effects in other areas such as agriculture, biology, medicine, pharmacology, and the like. In all of these areas, a planned outcome is hoped for and is measured before and after certain things have been done to the organisms being treated. For example, cattle are fed, drugs are administered, fertilizers are applied, etc. Analogously, students are taught.

The Effects of Differences in School Practices Can be Measured

In detecting and measuring the effects of treatment and assessing them quantitatively, an effort is always made to estimate the effects of applying the treatment to one of two comparable groups that are usually drawn at random from the same population of subjects. It is also important to vary only one treatment factor at a time so an effort is made to match the sample in such a way that the only difference between them is that they have been treated differently in one respect and one respect only.

Determining Results per Unit of Educational Treatment

In the assay of treatment effects in biology, agriculture, medicine, and the like, questions are not posed such as, "Is fertilizer an effective treatment of soil?" The question is also never phrased in terms such as, "Does fertilizer make crops grow better?" Rather, the question that is posed in these areas is, "What is the amount of effect obtained for a given amount of treatment under standardized conditions with standardized subjects?"

The Law of Diminishing Returns

The science of the assay of treatment effects in several areas is rather highly developed along with the corresponding mathematics and statistics. It has been found almost universally that the relationship between the amount of treatment applied and the results obtained is not linear. In other words, two units of treatment do not always give twice as much effect as one unit. At least they do not throughout the full range of magnitude of the treatment. Sometimes the effect of doubling a very small amount of treatment is more than double, whereas once the magnitude of the amount of treatment becomes moderately large, further increase in the amount of treatment usually gives relatively small increments in effect per unit of additional treatment. Figure 1-1 shows an example of a typical treatment curve. Notice the pronounced flattening of the curve as it increases. There seems to be a very strong tendency for most treatment curves to follow this shape. It can be seen that for some distance along the middle the curve approximates a straight line. Soon after the middle part of the curve is passed, it shows a definite flattening out and this is the well-known plateau. This phenomenon is the basis for the so-called Law of Diminishing Returns.

It should be pointed out that nearly always these curves are continuous and an increment of treatment will have its corresponding increment in effect no matter how slight. The effect may be so slight as not to be detectable with our present means of measuring effects. Nevertheless, in most situations it still exists. As a result, of course, it is exceedingly difficult to prove that something is completely lacking in effectiveness. It can be much more easily proved that something must have very slight effectiveness.

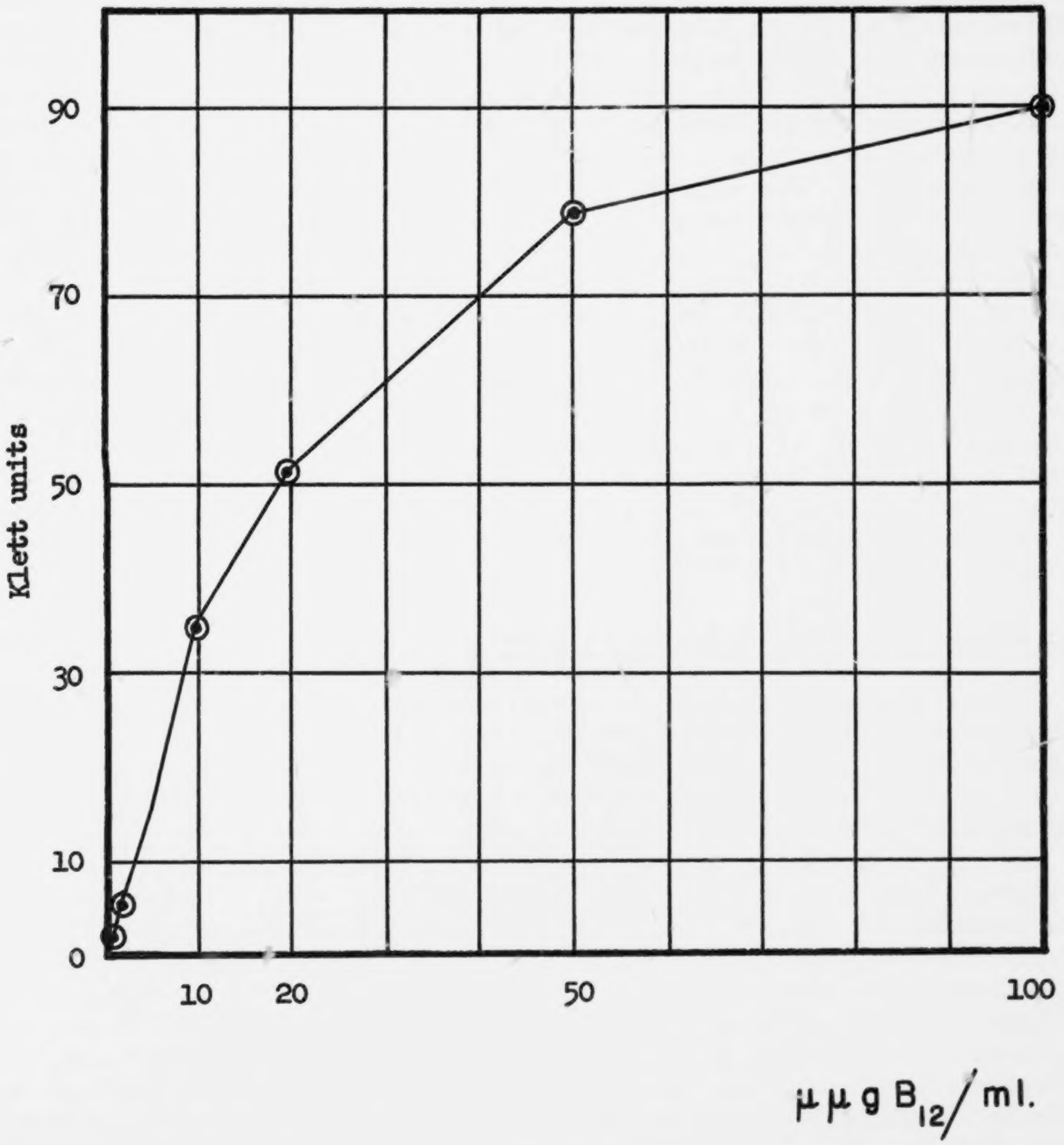

Figure 1-1. Effect of various concentrations of Vitamin B-12 on marine fungus growth. (Science, Vol. 127, 17 January 1958, p. 147. American Association for the Advancement of Science, Washington, D. C.)

Assessing Effects of School Practices

In the high school, the so-called "effect" might be, for example, the amount learned in a given subject, such as English or mathematics. The effect here is the result of the complex interaction of a very large number of treatment factors, including the effects of the home and community environments, the effects of the teachers, the effects of friends and associates, and, of course, will be very much affected by the basic learning capacity of the student and his basic motivation for studying and learning. In this situation, a single aspect of teaching may account for only one per cent of the total learning effect even when the amount of application of the treatment factor varies from near zero to the maximum treatment amount encountered in actual practice. For example, if the magnitude of the treatment factor is varied from a minimum amount to a maximum amount, the amount of learning might vary by one per cent. Figure 1-2 shows a hypothetical treatment curve for Factor X which accounts for one per cent of the total learning in a given subject during a school year. Let us arbitrarily assume that 10 per cent of the total amount of treatment is one-tenth of the total effect from that factor, and 90 per cent of the theoretical maximum treatment on this factor gives 99+ per cent of the total. It can be seen within the upper ranges that a moderate amount of variation in the amount of treatment on this factor might be expected to account for perhaps one-tenth of one per cent of the total learning from all causes in this area during the period of treatment. It is highly unlikely that an effect of this minuteness could be reliably measured in a school situation.

The Effect per Unit of Change in School Practices

There are at least two or three hundred important aspects of a high school whose net effect on learning is one per cent or less of the total effect from all causes. Some of these might perhaps have a net effect of only a small fraction of one per cent, and yet their net effect is positive and greater than zero. There is no single factor accounting for excellence of results in schools, and the credit for effective learning has to be distributed among a very large number of different types of effective practices and treatments. This accounts for the high proportion of negative results in educational experiments and studies. In a high proportion of educational experiments the amount that the treatment is altered under experimental conditions probably affects the total outcome so slightly that it is impossible to detect it reliably, particularly with the relatively small and relatively unrepresentative samples used in much research. The assessment of treatment effects in education, and of course in other areas too, is complicated by the fact that the effects sometimes may occur many years after the treatment. There may be many unplanned effects, and such undesired side effects may be delayed side effects that will not be evident for many years.

Determining Cost per Unit of Gain

In educational research we should not pose such questions as, "Is X an effective way of teaching?" We should rather ask in regard to a given educational practice, "What is the cost per unit of gain achieved through

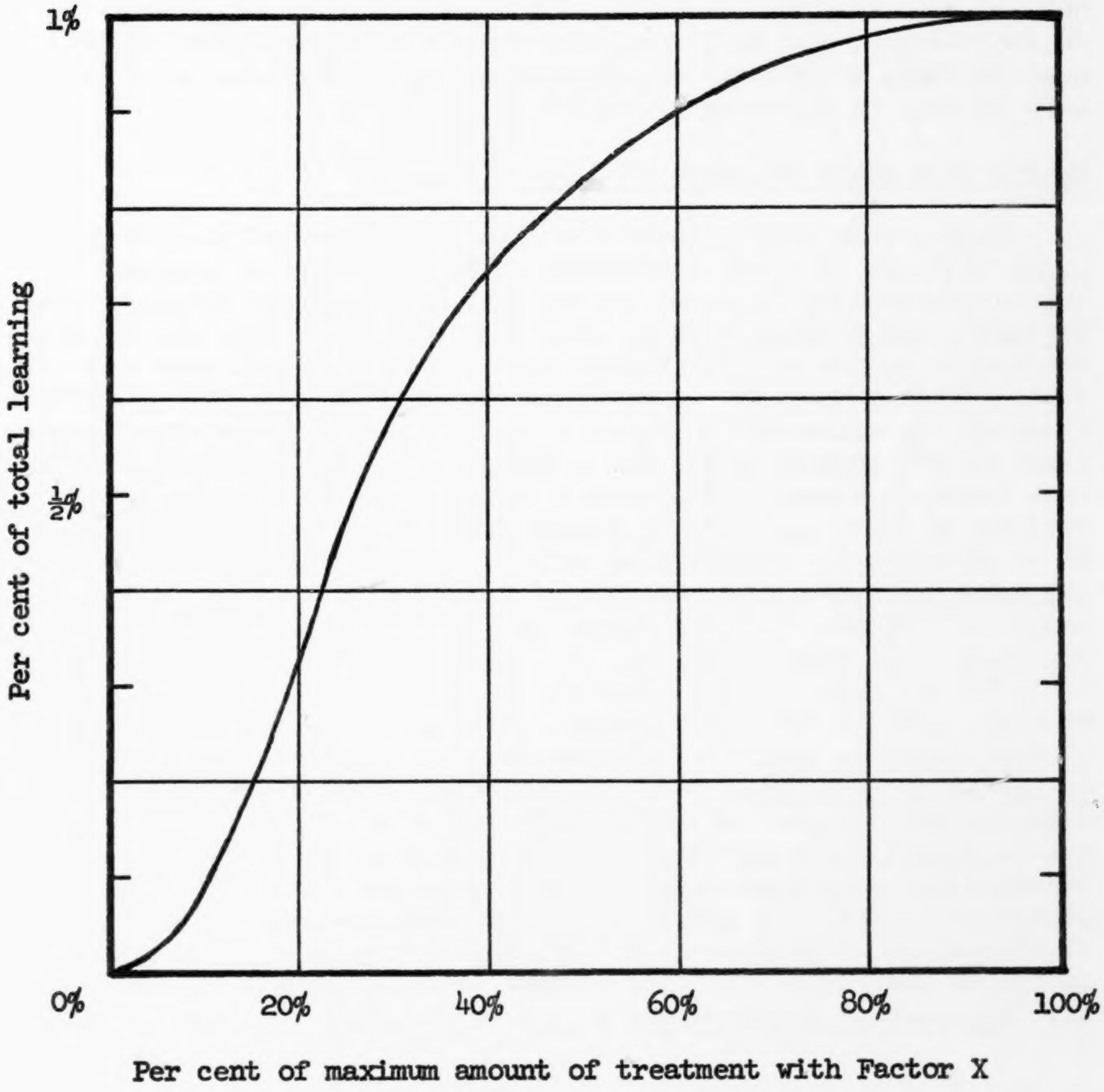

Figure 1-2. Hypothetical treatment curve for Factor X

altering this educational practice?" It appears in education that one very rarely finds any really prime or critical factor that is an absolute prerequisite to school excellence. It is also rare that a new teaching practice is developed and evaluated that doesn't turn out to be capable of producing an appreciable amount of learning in students. One of the primary questions to be answered by evaluative research is, "What is the cost per unit of gain for this factor?" This cost, of course, is cost in money, cost in convenience, and so forth. The important thing, then, is to compare the cost per unit of gain to be achieved by this new factor with the cost per unit of gain of existing practices.

Effect of a Small Decrease in Class Size

There seems little doubt that small classes are more effective than large classes. Yet the difference between a class of moderate size and one just a little larger is not possible to detect, even though dozens of experiments and studies have attempted to do this in the past. It is also not detectable in the Project Talent data. This does not mean that size of class is not important. A class of 10 undoubtedly would do better than a class of 40, although it would do only a little better. And, of course, a class of 500 perhaps might not learn at all under ordinary conditions. The real issue in education, however, is the magnitude of the effects of having classes of 30 to 32 students versus the effects of having classes of, say, 25 to 28 students. Decreasing size of class is extremely expensive, one of the most expensive types of things one might do in the school. The evidence seems to indicate that the amount of gain in learning to be obtained by lowering class size from, say, 31 to 27 would be relatively slight. Nevertheless, if the class size is lowered the students will ordinarily learn better. However, that is not the question. The question is, "Will they learn better if that money is spent on more teachers and smaller classes than they would if the money were spent on something else, such as better teachers?" All school practices are competing with each other for the scarce money in the school budget. The school administration must draw a balance between more teachers and more highly paid teachers; between a new building and other expenditures. What the school administration needs to do is to find an optimal configuration of practices and expenditures which will result in a maximum amount of learning, and other planned school outcomes. In effect, the question is, "How best to maximize the amount of learning obtained per dollar?"

E. What is to Come Later in the Monograph

Chapter 2: Characteristics of American High Schools

In this chapter descriptive data will be presented regarding selected characteristics of the average American high school. Such characteristics will include size, expenditure rate, organization, policies, size of classes, salary schedule, and the like. Data will also be presented for several different groups of schools. These groups will include vocational schools, all of the big city schools, the Southeastern schools, and the schools in the Northeast, West and Far West. Some data will also be presented on the non-public high schools.

Chapter 3: Characteristics of Guidance and Counseling Programs

Here will be given information on a number of important characteristics of the guidance and counseling programs of the schools. This will be in terms of the type of program, the organization of the program, the facilities available, the aims, objectives, and so forth. Results will also be shown on some of the interrelationships of these characteristics of guidance and counseling programs.

Chapter 4: A System for Classifying Public High Schools

Here will be described the system that has been developed for classifying all public high schools into 17 homogeneous categories of similar schools. This taxonomy or classification system for public high schools is based on a combination of region, socio-economic factors, rural-urban factors, and whether the school is a vocational high school or a comprehensive high school. Case histories are presented illustrating many of these types of high schools. Information is reported to show how much schools vary in the achievement and performance of their graduates. This taxonomy of high schools is very basic to further analyses and has proved to be a useful way of presenting data for different types of high schools where important situational factors have been held constant for analysis purposes. It is also a valuable way to present census data.

Chapter 5: The Statistical Characteristics of School Means

Formulas are presented for estimating the reliability of school means and for interpreting the intercorrelations among them. The factors underlying the differences between these correlation coefficients and the corresponding correlations among individual students' scores are discussed.

Chapter 6: Intercorrelations of School Characteristics and School Achievement and Performance Measures

In this section are presented the intercorrelations of school characteristics, school test means, and a number of school outcome variables. Data are presented for several combinations of 50 such variables. The various achievement tests and non-test measures such as college entrance rate, dropout, absenteeism, delinquency, etc., are described.

Chapter 7: Analysis of American Guidance and Counseling Programs

In this chapter are presented intercorrelations between many characteristics of guidance programs and various school characteristics, and measures of school outcomes.

Chapter 8: A Survey of the Use of Tests by High Schools

In this chapter are presented the results of the survey of what tests have been given by different types of high schools and what uses are being made of them. The use of tests is related to other school characteristics.

Chapter 9: Multiple Regression Studies of the Relationships of School and Community Characteristics to Aptitude and Achievement Tests at Grade 12

Here are presented multiple regression studies for a combination of 50 aptitude and achievement tests, school characteristics, and school output measures. One of the studies reported includes 11 community characteristics such as unemployment rate, median family income, etc. Results of a second study in this chapter are presented for the 17 taxonomy groups, grouped into three overall combinations of groups. One of these consists of all of the intermediate and large city schools plus the vocational high schools. The second consists of all the Southeastern schools, and the third combination consists of the remaining groups in the country. In this chapter are shown the relationships between such school characteristics as school size, teacher salary and experience, etc., and achievement measures and performance measures with a number of variables held constant through multiple regression. The data indicate the possible unique contribution of each of the school characteristics towards each of the school criterion variables.

Chapter 10: Relation of School Practices and Characteristics to Educational Outcomes

In this chapter the relationships between school practices and selected educational outcomes as measured are shown by two-way plots in which each taxonomy group of schools is represented by a point. For example, one point might represent the average per-pupil expenditure for a given taxonomy group and its average Reading Comprehension test score. There would be 17 points on the chart, each representing one of the 17 taxonomy groups. By examining these figures it is possible visually to detect patterns of interrelationships of school characteristics and educational outcomes interacting with quality of housing, region of the country, socio-economic status, and whether the school is a vocational high school or not. Many interesting patterns are displayed this way which would not be visible in a set of multiple regression statistics.

Chapter 11: Summary and Conclusions

This chapter consists of the summary and conclusions.

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Chapter 2

A PICTURE OF AMERICAN HIGH SCHOOLS

Introduction

Among the data gathered by Project Talent was information covering many general characteristics of the schools in the sample. This information was supplied through a questionnaire, usually filled out by the school principal. In addition, other questionnaires were used to collect information about the school's guidance program and about each of its counselors.

The tremendous mass of information collected has not yet been analyzed from all points of view; and even if it were, the space available would not permit a complete description of the results. The first part of this chapter is devoted to some of the broad characteristics of American public senior high schools, saving a detailed consideration of selected aspects of the data for a later section. Thus, here the American public senior high school is discussed primarily as a national institution. (This is somewhat comparable to comparing a student's performance to national norms.) It must be clearly understood that the national picture changes considerably if looked at in smaller, more homogeneous sections. Much of the last part of this report will be concerned with data based on the population of schools divided up into smaller, homogeneous groups in order to avoid confounding the results by failing to control certain major variables.

This chapter first presents an overview of the questionnaire used, the sampling procedures, and the data collection. It then proceeds with a discussion of broad characteristics of the average public high school. Following this, data are presented and discussed for selected characteristics of five basic types of schools: (1) Large city schools; (2) Southeastern schools; (3) Northeastern, Midwestern, and Western schools; (4) Non-public schools; and (5) Vocational high schools. The choice of these five groups was based on preliminary work with the data discussed later in this report.

Sampling Procedures

A basic list of public senior high schools (i.e., all schools including a 12th grade) was supplied by the U.S. Office of Education from their 1958-59 Survey of Public Secondary Day Schools. These schools were sorted by states and arranged contiguously by the nine U.S. Office of Education Regions. The five largest cities--New York, Chicago, Philadelphia, Detroit, and Los Angeles--were treated as a separate Region. Within each state, schools were sorted into four size categories:

Category	Number of Students in Grade 12
1	0 - 24
2	25 - 99
3	100 - 399
4	400 and over

Within each size category, schools were ordered according to a measure of the school's "holding power", the ratio of the number of 1959 graduates to the number of students in Grade 10 during the 1959-60 school year.

Differential sampling ratios were employed in order to get a sufficiently large sample of large schools. Using an IBM 650 Computer, a random sample of 1 in 50, 1 in 20, 1 in 20, and 1 in 13 was drawn from each of the four size categories, respectively. Remnants from each state were combined with the same size category in a contiguous state.

The non-public high school sample was drawn according to a straight 1 in 20 sampling ratio stratified only by region. Measures of "holding power" and class sizes were not available consistently enough to permit stratification on these two variables. In addition, outside evidence suggested that these two variables were less important in drawing the non-public sample than for the public.

The Questionnaire

In all, nearly 1000 items of information were obtained for each school, including information on the school program, the guidance program, average test scores for students, students' background data, and students' plans for the future. The General School Characteristics Questionnaire used to collect most of the data presented in this chapter is given in Appendix A. This questionnaire included the following kinds of information:

.. Average class size in science and mathematics

.. Homework requirements

.. Recognition for achievement, including dean's list or honor roll, national honorary societies, or special prizes or awards

.. "Enrichment" of the program of study through an honors track, honors courses, special classes, taking additional work, or working on assignments of greater depth

.. "Acceleration" for superior students, by course or in all subject areas

.. Homogeneous grouping--whether for the entire grade or just for specific subjects

.. Course offerings. In mathematics: elementary and intermediate algebra, and calculus. In science: biology, botany, zoology, chemistry, college chemistry, physics, college physics, and many other specialized courses

.. Participation in an experimental curriculum in one or more subjects, especially science or mathematics

.. The number of books in the library

.. Employment of curriculum supervisors in each subject matter area, including science, mathematics, foreign languages, history or social studies, English, art, and music

.. Attendance by teachers at summer institutes sponsored by the National Science Foundation or the National Defense Education Act of 1958. These institutes are held in the areas of mathematics, science, and counseling

.. School economics including per-pupil expenditures, and the school tax rate

.. School facilities, including science laboratories

.. Community facilities such as a public library, art gallery, museum, opera, concerts, amateur theater, and legitimate theater. Also youth organizations such as a 4-H Club, Boy or Girl Scouts, Future Nurses' Club, Future Teachers of America, and others

.. Extra-curricular activities such as subject matter clubs, hobby clubs, chess club, drama, debate, National Honor Society, and many others

.. Information on the staff. The principal's sex, age, experience as a principal, teaching experience, highest earned degree, honorary degrees (if any), and college credit hours obtained in education courses. Questions were asked about the number of full-time teachers, number of regular part-time teachers, per cent of teachers who are men, teacher turnover, degrees earned, per cent of teachers fully certified by the state, per cent of the teaching staff who spend more than half of their teaching time in their major area of preparation, annual starting salary for teachers with a Bachelor's degree but with no experience, and average years of full-time teaching experience

.. Information on the community. The per cent of students whose parents were members of the PTA; frequency of PTA meetings; urban, suburban, or rural location; and description of the immediate neighborhood in terms of industrial, commercial, or residential

.. A description of the school in terms of type, such as general comprehensive, college preparatory, or a special school for superior students; grades included in the school;and accreditation

.. Administrative practices such as mid-year graduation; mid-year promotion; number of school days in the school year; number of class periods per day; length of the class period, method of grading (letter grades, numerical grades, or other methods); basis for grading (subject matter achievement, achievement relative to classmates, achievement relative to ability, or some combination); policy on acceleration; and policy on slow-learners

.. Questions about the student body, such as enrollment by grade and sex; absentee rate; dropout rate; per cent of students on half-day sessions; per cent of students in various curricula including college preparatory, commercial, trade, agricultural, and others; per cent of the graduates of the previous year who enrolled in college or in some other kind of training after high school

In general, pre-coded categories were used in order to minimize the effort required of the principal and to maximize the objectivity of the data for machine processing. For certain items it was not possible to use categories that would effectively cover the entire expected range of the variable. In such cases the end of the range used was selected on the basis of being able to discriminate at the most important end. This was usually deemed the lower end because of the large number of small schools in the country. This has had the effect in some cases of making some of the mean values (e.g., for number of teachers on the staff) underestimates by a substantial margin.

The school questionnaires were mailed to the principal of each cooperating school along with a postage-paid, self-addressed envelope. As might be expected, the initial response of the busy principals was not 100% complete. However, exhaustive follow-up by mail plus the personal reminders of Regional Coordinators (Flanagan, 1962), eventually produced a virtually 100% complete response. Questionnaires were even obtained for about half of the schools that originally declined to participate in the study.

All questionnaires received were checked for completeness and were returned for additional information if more than about 10% of the items were blank, or if certain key items such as per-pupil expenditure, enrollment, or grouping policies had been omitted. Thus, the data collected were notably complete, particularly for those items adjudged particularly important.

Description of the Sample

About 93% of all of the schools invited to participate took part in the testing. Virtually all of these returned the General School Characteristics Questionnaire. Weights were computed in order to allow for the differential sampling ratio used for non-response, and for some oversampling which became necessary in New York City and Chicago. These weights reproduce the population of American public senior high schools. The basic list of non-public schools used was supplied by the Office of Education, and cross-checked against the Porter Sargent Handbook of Private Schools (Sargent, 1959), and information about Catholic schools supplied by the National Catholic Welfare Conference (1959).

The Public Senior High Schools

The data presented in the next few pages apply only to public senior high schools, and are intended to provide an overview of this portion of the school population. About 94% of the almost 19,000 American public senior high schools classify themselves as "General Comprehensive". Table 2-1 presents a good picture of the regional distribution of these schools by size. Note the heavy concentrations of large schools in the Mideast and Great Lakes regions, and of small schools in the Plains, Southeast, and Southwest. Table 2-2 clearly shows the relationship of size of school to type of area served, and Table 2-3 relates school size to grade structure. Small schools tend to cover all 12 grades, and be located in small towns and rural-farm areas. Almost 80% of American public senior high schools have less than 100 in the 12th grade; almost 70% are rural or located in towns smaller than 5,000; and almost half of them are the full range, grades 1-12 type.

Once more it should be emphasized that national figures do not apply equally well to various sub-groups in the nation, and that this "national overview" is presented primarily as a matter of general interest. Our work with smaller groups, reported in subsequent chapters, shows clearly that such things as the relationship of per-pupil expenditure to achievement may be substantially different from one group of schools to another.

School Plant

Table 2-4 presents several items of information about the school plant and its facilities. It can be seen that the average school is nearly 25 years old and that the last renovations, or painting, averaged almost seven years ago. The school library averages about 1,900 books. (Note that this figure is an underestimate because large libraries were categorized in the largest size category as "2700 or more".) While almost three-quarters of the schools have a guidance program, only 57% of those that do believe they have adequate space for it. About three-quarters report adequate filing space. (More information about guidance programs is presented in Chapters 3 and 7.)

School Policy

Table 2-5 presents the results regarding some selected school policy characteristics. It can be seen that the average class size is 25 or under,

Table 2-1

Distribution of Public Senior High Schools by Office of Education Region and Size

Region	Grade 12 Class Size				Total	Percentage of Grand Total
	0-24	25-99	100-399	400+		
New England	200	320	240	13	773	4.3
Mideast	150	840	720	91	1801	10.1
Great Lakes	750	1720	640	143	3253	18.2
Plains	1700	1240	240	39	3219	18.0
Southeast	1600	2800	740	52	5192	29.0
Southwest	1200	700	200	52	2152	12.0
Rocky Mountains	400	220	60	26	706	4.0
Far West	150	280	240	52	722	4.1
Non-Contiguous	-	-	60	-	60	0.3
Total Schools	6150	8120	3120	468	17878	
Percentage of Grand Total	34.4	45.5	17.5	2.6		100.0

Note.--Based on 93.5% of the population

Table 2-2

Number of Public Senior High Schools by Type of Area Served and Size (GSC-88)

Item 88. Pupils attending grades 9-12 in your school come from areas which are best described as primarily (as indicated below)*

Type of Area	Grade 12 Class Size				Total	Percentage of Grand Total
	0-24	25-99	100-399	400+		
Urban-residential	100	220	560	195	1075	6.1
Urban-commercial	-	40	240	-	280	1.5
Suburb-residential	50	480	540	91	1161	6.5
Suburb-commercial	50	120	180	39	389	2.1
Scatter over city	-	680	840	91	1611	9.1
Small town (under 5000 people)	1700	2960	360	-	5020	28.1
Rural-farm	4200	3080	160	-	7440	41.7
Other	50	540	240	52	882	4.9

Note.--Based on 93.5% of the population

* For exact wording of this question see Appendix

Table 2-3

Number of Public Senior High Schools by Grade Structure and Size (GSC-2)

Item 2. Grades included in your school: (as indicated below)*

Grade Structure	Grade 12 Class Size 0-24	 25-99	 100-399	 400+	Total	Percentage of Grand Total
K-12 or 1-12	4800	3680	180	13	8673	48.6
7-12	200	1640	580	13	2433	13.6
8-12	100	600	220	-	920	5.2
9-12	950	1880	1360	195	4385	24.6
10-12	50	260	740	234	1284	7.2
Other	50	60	40	13	163	.8

Note.--Based on 93.5% of the population
* For exact wording of this question see Appendix

Table 2-4

School Plants

Item No.	Item	Mean	σ
GSC-33*	Age of school plant	24.3 years	15.2 years
GSC-34*	Years since last renovation or painting	6.8 years	9.4 years
GSC-32*	Size of library	1967 books	890 books

		Per Cent Saying "Yes"
GP-5*	Guidance facilities adequate	
	Space for Guidance Services	89.2
	Confidential File	94.1
	Test Files	94.1

Note.--Based on the 73% of the schools reporting guidance programs.
* For exact wording of this question see Appendix

but it should be noted that there is a wide distribution around this mean, particularly for other than science and mathematics classes. As will be reported later, almost the only schools whose class size is average or smaller are schools so small they have only one class per basic subject. This illustrates the need to have statistics based upon smaller and more homogeneous groups of schools. Only 27% of the schools reported having a summer school available where students could take summer work. The data show that midyear admission and promotion are rarely found in our schools. About 22% of the schools had participated in an inter-system tryout of some experimental curriculum and a full 36% had tried some experimental curriculum within their own system.

Table 2-5

School Policies

Item No.	Item	Mean	σ
GSC-9*	Class size, math-science	22.8	6.2
GSC-10*	Class size, other classes	24.9	9.9
GSC-6*	No. days in school year	179.4	6.5
GSC-7*	No. periods in school day	7.3	1.0
GSC-11*	Hours of homework expected	1.7	.7
		Per Cent Saying "Yes"	
GSC-4*	Regular midyear admission to 1st Gr.	2.5	
GSC-5*	Regular midyear promotion	4.9	
GSC-21*	Organized summer school program available in system	24.7	
GSC-12*	One or more study halls per week	92.8	
GSC-25*	Participation in tryout of experimental curriculum, inter-system	21.5	
GSC-26*	Participated in tryout of experimental curriculum, local	35.6	

*For exact wording of this question, see Appendix

School Staff

By-and-large public senior high school principals are middle-aged (average 45 years), male (97.4%), and long-time workers in the field of education. Table 2-6 shows that they average about 11 years of teaching experience and another 12 years of experience as a principal. On the average it has been about five years since they came to this school (though this distribution is very skewed). Principals average 46 education credits and a large majority (83%) have a graduate degree.

Table 2-6

The School Principal

Item No.	Item	Mean	σ
GSC-103*	Age	44.7	9.9
GSC-107*	Credits in Education	45.6	10.4
GSC-101*	Years as a Principal - any school	11.8	8.4
GSC-102*	Years as a Principal - this school	5.3	7.6
GSC-105*	Years as a Teacher (prior to becoming an administrator)	11.0	7.6
		Per Cent Saying "Yes"	
GSC-104*	Male	97.5	
GSC-106*	Having some graduate degree	82.8	

*For exact wording of this item, see Appendix

Results regarding school staff are presented in Table 2-7. It is noteworthy that average starting salaries for men and women are hardly distinguishable, and appear to run considerably higher than they did in the recent past.

The number of years of teaching experience averages about 10.5, suggesting that teachers tend to stay in teaching. Many teachers try to improve themselves through summer school, as 58% of the schools reported that one or more of their staff had attended NSF or NDEA Summer Institutes. On the average about 93% of these teachers are teaching (according to the principal) at least half-time in their major field. The size of the standard deviation here (18%) suggests, however, that this is a skewed distribution with a number of schools reporting a much lower percentage. The average school has 56% male teachers, though there is a wide range around this figure.

The Students

Table 2-8 shows something about the students in our schools as reported by principals. The average reported percentage of college attendance for public school senior boys is only 28%. However, there is a large standard deviation, showing that this distribution is very skewed. This figure represents a percentage based on schools, not on students. The percentage of students would undoubtedly be somewhat higher since larger percentages characterize the larger schools. In addition, it is probable that principals tend to under-estimate the rate at which their students enter college.

Though the percentage of Grade 10 boys who drop out before graduation may be similarly under-estimated, schools appear to average about 10%. Daily absenteeism averages about 5%.

Table 2-7
The Teaching Staff

Item No.	Item	Mean	σ
GSC-46*	Percentage of male teachers	56.2	24.0
GSC-56*	Starting salary - male	$3750	$650
GSC-57*	Starting salary - female	$3720	$630
GSC-58*	Years of teaching experience	10.5	3.8
GSC-52*	Per cent teaching in major field	93.0	18.0
		Per Cent of Schools	
GSC-55*	One or more of staff attended a NSF Summer Institute	55.8	
GSC-30*	Tenure is automatic after a fixed prescribed period	41.2	

*For exact wording of this item, see Appendix

Table 2-8

The Students

Item No.	Item	Mean
GSC-72*	Percentage of boys going to college	27.6
GSC-73*	Percentage of girls going to college	25.9
GSC-75*	Percentage going to junior college	6.9
GSC-29*	Percentage absenteeism	5.2
GSC-70*	Percentage dropout - boys	10.0
GSC-71*	Percentage dropout - girls	8.8

*For exact wording of this item, see Appendix

The Community

Table 2-9 presents some of the aspects of the community. PTA membership averaged only 31%, but the large standard deviation shows a definite skew to this distribution. In only 18% of the schools had a citizens' group made a study involving the school within the last three years.

In spite of the fact that 68% of the schools draw from rural areas and towns under 5,000, and that 39% come from low cost low income areas, per-pupil expenditures still averaged about $375.

Table 2-9

The Community

Item No.	Item	Mean	σ
GSC-84*	Percentage PTA membership	31.0	22.4
GSC-93*	Percentage bi-lingual families	4.5	14.9
GSC-89*	Per-pupil expenditure, system	$375	$172
GSC-86*	Age of housing	24.4	
		Per Cent	
GSC-88*	Rural and small town areas	68.6	
GSC-87*	Low cost, low income areas	39.4	
GSC-83*	Citizens study in last three years	18.5	

*For exact wording of this item, see Appendix

In summary, on a national basis we find the typical American public senior high school is quite small, is likely to be part of a Kindergarten through Grade 12 school or a Grade 7 through 12 school, and to average less than 100 seniors. It serves a rural or small town community which spends about $375 per pupil. Its teachers average about 10.5 years' experience, and start at an average salary of $3720 - $3750 per year. Classes average 23-25 pupils in a building which is about 24 years old. There is about a 3-out-of-4 chance that some sort of a guidance program is available. The principal is a middle-aged man with a graduate degree who has had about a dozen years of experience in administration and almost a like amount as a teacher. This school reports sending about 28% of its senior class on to college, and about 10% of its 10th graders drop out before graduation.

School Characteristics for Five Groups of Schools

Descriptions of the Five Groups of Schools

The School Characteristics Questionnaires have been tabulated separately for five different groups of schools. The first of these groups includes all of the general comprehensive public high schools in cities of more than one-quarter of a million population. There are 107 of these in our sample. The results are weighted in order to reproduce the national population of schools. The second group of 212 schools consists of all of the general comprehensive public high schools in U.S. Office of Education Region 5, Southeastern states. This region consists of Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, and West Virginia. The third group of 468 schools includes all of the general comprehensive public high schools in the remainder of the country. The fourth group of 165 schools includes all of the non-public high schools. The fifth group includes all of the 35 public vocational high schools.

Size of the School

Table 2-10 shows the distribution of schools by total Grade 12 enrollment within each of the five groups. It can be seen that the groups differ tremendously in average school enrollment.

Type of School

Table 2-11 shows the distribution of schools by category (GSQ-36). It can be seen that 1.5% or 2 of the schools in the Southeastern group classify themselves as "other". One of these schools is a university high school which is both a public and a demonstration school, and the other is a school which is both public and boarding. Of the schools grouped as non-public 2.8% or 2 classify themselves as public. These are not included on the list of public secondary schools by the U.S. Office of Education. One of these two schools is a state school for the deaf, and another is a county detention home for boys where the principal said they don't really run a high school, but give tutoring to the boys just to keep them up in their courses during the short periods they are assigned to the detention home. It can be seen that of the non-public schools, 45% classify themselves as parochial, 36% classify themselves as private but religious affiliated, 13% classify themselves as private not religious affiliated, and 3.6% classify themselves in other ways. It is interesting to note that all but a small minority of the non-public schools are religious affiliated.

Accreditation

Table 2-12 shows the type of accreditation and official recognition (GSC-3). It can be seen that less than 1% of the public comprehensive high schools are not accredited in some manner. Five per cent of the non-public high schools, and 26% of the vocational high schools are not accredited.

Table 2-10

Distribution of Schools in Each Composite Group by Total Grade 12 Enrollment (GSC-59)

Number of Grade 12 Students	Group 1**	Group 2**	Group 3**	Group 4**	Group 5**
1600 - 1799	.2	-	-	-	-
1400 - 1599	.8	-	-	-	-
1200 - 1399	1.6	-	-	-	-
1000 - 1199	3.3	-	-	-	-
900 - 999	2.3	-	-	-	-
800 - 899	6.0	-	-	-	-
700 - 799	1.3	-	1.1	-	-
600 - 699	5.6	-	.4	-	-
500 - 599	6.1	-	1.5	-	-
450 - 499	8.1	.2	.4	-	.5
400 - 449	.5	-	.7	-	-
350 - 399	5.7	1.0	1.4	-	1.0
300 - 349	10.7	.8	.2	.6	2.5
250 - 299	13.0	.8	3.0	1.0	1.5
200 - 249	10.0	.8	1.7	1.9	2.0
150 - 199	9.7	3.5	5.9	6.5	14.5
100 - 149	2.9	6.0	6.8	8.8	32.5
90 - 99	-	4.7	2.2	1.5	-
80 - 89	3.2	4.5	2.0	4.5	-
70 - 79	2.9	5.5	4.2	4.7	-
60 - 69	-	4.4	4.7	5.7	.5
50 - 59	5.9	8.5	6.8	4.5	20.0
40 - 49	-	10.8	6.5	11.7	-
30 - 39	-	11.1	10.3	8.2	-
20 - 29	-	15.5	10.8	12.1	-
10 - 19	-	17.8	21.8	14.7	25.0
0 - 9	.2	4.1	8.6	13.6	-
Total	100.0	100.0	100.0	100.0	100.0
No. of responding schools*	664	5,219	12,620	3,583	200
Total no. schools*	665	5,282	12,664	3,633	200
No. of schools in sample	107	212	468	165	35

*Weighted to reproduce the national population of schools

**Group 1: All public comprehensive and academic senior high schools in cities of more than 250,000 population

Group 2: All public comprehensive and academic senior high schools in the Southeastern United States other than those in Group 1

Group 3: All public comprehensive and academic senior high schools other than those in Groups 1 and 2

Group 4: All non-public senior high schools

Group 5: All public vocational senior high schools

Table 2-11

Distribution of Schools in Each Composite Group by Category of School (GSC-36)

Item 36. Which one of the following categories best describes your school? (as indicated below)*

	Percentage of schools				
	Group 1 Cities	Group 2 SE	Group 3 NE & W	Group 4 Non-Pub.	Group 5 Vocatl.
1. Public	100.0	98.5	100.0	2.8	100.0
2. Parochial or diocesian	0.0	0.0	0.0	44.6	0.0
3. Private, religious affiliated	0.0	0.0	0.0	35.7	0.0
4. Private, not religious affiliated	0.0	0.0	0.0	13.3	0.0
5. Other (specify)	0.0	1.5	0.0	3.6	0.0
Total	100.0	100.0	100.0	100.0	100.0
Number of responding schools**	665	5,282	12,664	3,633	200
Total number of schools**	665	5,282	12,664	3,633	200
Number of schools in sample	107	212	468	165	35

*For exact wording of this question see Appendix

**Weighted to reproduce the national population of schools

Table 2-12

Distribution of schools in each composite group by accreditation of teachers (GSC-3)

Item 3. Type of accreditation or official recognition (as indicated below)*

	Percentage of schools				
	Group 1 Cities	Group 2 SE	Group 3 NE & W	Group 4 Non-Pub.	Group 5 Vocatl.
1. Regional only	8.6	1.6	1.9	4.9	10.0
2. State only	10.1	64.0	52.9	48.0	46.0
3. Regional and state	77.7	33.6	40.4	32.9	14.5
4. Other (specify)	0.0	0.0	1.6	3.5	0.0
5. None	0.3	0.8	0.7	5.0	25.5
6. University*	3.0	0.0	1.6	2.8	0.0
7. Religious*	0.0	0.0	0.0	3.9	0.0
8. City*	0.0	0.0	0.2	0.0	1.0
10. City and state*	0.3	0.0	0.7	0.0	3.0
Total	100.0	100.0	100.0	100.0	100.0
Number of responding schools**	664	5,261	12,644	3,586	200
Total number of schools**	665	5,282	12,664	3,633	200
Number of schools in sample	107	212	468	165	35

*For exact wording of this question see Appendix--options 6, 7, 8, and 10 were written in under "Other"

**Weighted to reproduce the national population of schools

Organization--Grades Included

Table 2-13 shows the distribution of the grades included in the schools (GSC-2). Practically none of the city high schools include grades 1-12, but 59% of the Southeastern high schools are in this category, and 45% of those in the other regions are. Of the non-public schools 26% include grades 1-12. The modal city school includes grades 9-12 as does the modal non-public high school, and vocational high school. It is interesting to note that relatively few of the high schools, most of which are in the cities, are organized to include grades 10-12 only. This category includes 21% of the city schools, 3.7% of the Southeastern schools, 9% of the other regions, 0.6% of the non-public high schools, and 21% of the vocational high schools.

Table 2-13

Distribution of schools in each composite group by grades in school (GSC-2)

Item 2. Grades included in your school (as indicated below)*

	Percentage of schools				
	Group 1 Cities	Group 2 SE	Group 3 NE & W	Group 4 Non-Pub.	Group 5 Vocatl.
1. K-12 or 1-12	3.1	59.1	45.1	25.7	0.0
3. 7-9	0.0	0.0	0.2	0.0	0.0
5. 7-12	22.7	14.2	13.1	8.8	0.0
7. 8-12	7.1	8.0	4.1	4.5	1.0
8. 9-12	46.0	14.6	27.5	47.1	78.0
9. 10-12	21.2	3.7	9.1	0.6	21.0
10. 11-12	0.0	0.0	0.0	1.5	0.0
12. Other (specify)	0.0	0.4	0.9	11.9	0.0
Total	100.0	100.0	100.0	100.0	100.0
Number of responding schools**	644	5,282	12,664	3,633	200
Total number of schools**	665	5,282	12,664	3,633	200
Number of schools in sample	107	212	468	165	35

*For exact wording of this question see Appendix

**Weighted to reproduce the national population of schools

Rural-Urban

Table 2-14 shows the distribution of schools by rural-urban category (GSC-88). Of the city schools nearly half classify themselves as having pupils who come from areas that are best described as primarily urban-residential, industrial, or commercial. About 21% of these schools classify themselves as suburban residential, or suburban commercial, although they are included as part of the public school system of a city of 250,000 population or more. These schools are those at the periphery of the urban incorporated area. Some 15% of the schools say that they are scattered over the entire city, and 14% are in other miscellaneous categories. It can be seen that outside of the large cities most of the public comprehensive high schools are either small-town or rural-farm. The non-public high schools are spread over many of the categories, particularly urban and suburban residential (about 37%) and scattered over the small city (about 30%). About 18% of them are resident students not from the community.

Table 2-14

Distribution of schools in each composite group by rural-urban category (GSC-88)

Item 88. Pupils attending grades 9-12 in your school come from areas which are best described as primarily (as indicated below)*

	Percentage of schools				
	Group 1 Cities	Group 2 SE	Group 3 NE & W	Group 4 Non-Pub.	Group 5 Vocatl.
1. Urban residential	39.2	3.3	5.4	17.4	1.0
2. Urban industrial	7.5	1.2	0.5	1.5	21.5
3. Urban commercial	1.0	0.0	0.4	0.0	1.5
4. Suburban residential	17.8	4.3	7.3	19.5	10.0
5. Suburban industrial	0.0	1.9	2.1	1.8	10.0
6. Suburban commercial	3.0	0.4	0.2	0.0	0.0
7. Scattered over entire city (larger than 5,000 people)	14.9	12.6	7.8	30.5	21.0
8. Small town (Under 5,000 people)	3.0	18.6	33.1	5.4	25.0
9. Rural-farm	0.0	52.9	38.6	5.1	0.0
10. Other (specify)	13.1	3.6	2.9	0.6	0.0
11. Students are resident students--cannot estimate	0.4	1.2	1.6	18.2	10.0
Total	100.0	100.0	100.0	100.0	100.0
Number of responding schools**	665	5,261	12,642	3,559	200
Total number of schools**	665	5,282	12,664	3,633	200
Number of schools in sample	107	212	468	165	35

*For exact wording of this question see Appendix

**Weighted to reproduce the national population of schools

Quality of Housing

Table 2-15 shows how the principals described the residences in the area served by their schools (GSC-87). Very sizable systematic differences in types of housing can be seen associated with the grouping of schools here. About 28% of the large city schools reported low-cost housing, low-rent, or low-income areas. However, more than half of the Southeastern schools and 34% each of the non-Southeastern and vocational schools fell in this category. Only 9% of the non-public schools were in this category, but nearly a fourth of them responded that their students are resident students--cannot estimate.

Table 2-15

Distribution of schools in each composite group by residences served by school (GSC-87)

Item 87. The residences in the area served by your school are best described as primarily (as indicated below)*

	Percentage of schools				
	Group 1 Cities	Group 2 SE	Group 3 NE & W	Group 4 Non-Pub.	Group 5 Vocatl.
1. Expensive private homes	5.2	0.0	1.1	4.6	0.0
2. Moderate-priced homes	55.2	39.8	59.8	53.1	45.7
3. Low cost homes	7.2	33.0	26.2	2.3	21.9
4. High-rental apartments	3.3	0.4	0.0	1.7	0.0
5. Moderate-rental apartments	1.6	0.0	0.4	0.6	0.0
6. Low rental apartments	1.4	0.0	0.4	1.0	1.5
7. Low income areas	19.3	21.3	7.4	5.6	6.6
8. About equally apartments and homes	6.4	1.9	2.0	7.0	12.2
9. Students are resident students--cannot estimate	0.5	3.6	2.7	24.0	12.2
Total	100.0	100.0	100.0	100.0	100.0
Number of responding schools**	637	5,120	12,558	3,540	197
Total number of schools**	665	5,282	12,664	3,633	200
Number of schools in sample	107	212	468	165	35

*For exact wording of this question see Appendix

**Weighted to reproduce the national population of schools

Non-English Speaking Homes

Table 2-16 shows the proportion of the students coming from non-English speaking homes (GSC-93). It can be seen that this is extremely low for the Southeastern region schools and higher for the city schools, non-public schools, and highest of all for the vocational high schools.

Ethnic Origins of Students

Table 2-17 shows the ethnic origins of the students in the different groups of schools (GSC-95, -96, -97, -98, and -99). The Southeastern schools consistently have fewer of these ethnic groups (other than Negroes) than other school groups. The per cent Negro is nearly the same for the schools in the larger cities and the Southeastern region. A substantial percentage of Negroes can be noted in the big cities and vocational schools as well as in the Southeastern schools. The vocational schools also have a substantial proportion of Latin Americans. The non-public high schools have a low proportion of Negroes, but have the highest proportion for any of the groups of schools for Latin American enrollment. They also have considerable enrollment categorized as "other".

Table 2-16

Distribution of schools in each composite group by percentage of homes where one or more languages are spoken regularly (GSC-93)

Item 93. Approximately what percentage of your grades 9-12 pupils come from homes where one or more languages other than English are regularly spoken? (as indicated below)

	Percentage of schools				
	Group 1 Cities	Group 2 SE	Group 3 NE & W	Group 4 Non-Pub.	Group 5 Vocatl.
1. None	19.6	79.4	31.7	18.1	0.0
2. 0 - 9	55.0	18.6	50.5	53.1	57.3
3. 10 - 19	15.6	0.4	8.2	14.6	14.6
4. 20 - 29	2.7	0.4	4.3	4.8	2.0
5. 30 - 39	1.5	0.0	1.0	1.2	12.1
6. 40 - 49	0.7	0.4	0.9	2.1	0.5
7. 50 - 59	4.2	0.4	1.7	1.7	3.0
8. 60 - 69	0.4	0.0	0.2	1.1	0.5
9. 70 - 79	0.2	0.0	0.5	1.1	10.0
10. 80 - 89	0.0	0.4	0.3	1.0	0.0
11. 90 - 99	0.0	0.0	0.3	0.6	0.0
12. All	0.0	0.0	0.4	0.6	0.0
Total	100.0	100.0	100.0	100.0	100.0
Number of responding schools*	662	5,240	12,664	3,583	199
Total number of schools*	665	5,282	12,664	3,633	200
Number of schools in sample	107	212	468	165	35

*Weighted to reproduce the national population of schools

Table 2-17

Distribution of schools in each composite group by ethnic origin of students (GSC 95, 96, 97, 98, and 99)

Items 95-99. About what percentage of your grades 9-12 pupils are: (as indicated below)*

	Percentage of schools				
Item 95. Spanish or Latin American	Group 1 Cities	Group 2 SE	Group 3 NE & W	Group 4 Non-Pub.	Group 5 Vocatl.
None	40.7	89.3	66.0	43.0	46.8
0 - 9%	51.4	9.7	27.6	47.4	43.7
10 - 19%	6.5	0.0	3.0	5.0	2.5
20 - 29%	0.5	0.0	0.6	2.1	3.0
30 - 39%	0.9	0.0	0.6	0.7	2.0
40 - 49%	0.0	0.0	0.6	0.0	0.5
50 - 59%	0.0	0.0	0.8	0.0	1.5
60 - 69%	0.0	0.0	0.2	0.0	0.0
70 - 79%	0.0	0.0	0.2	1.1	0.0
90 - 99%	0.0	0.0	0.4	0.0	0.0
All	0.0	0.9	0.0	0.6	0.0
Total	100.0	100.0	100.0	100.0	100.0
Number of responding schools**	567	4,458	11,696	3,125	199
Item 96. Oriental					
None	39.4	97.1	88.7	76.1	92.7
0 - 9%	56.9	2.9	10.6	23.2	7.3
10 - 19%	3.7	0.0	0.0	0.0	0.0
20 - 29%	0.0	0.0	0.3	0.0	0.0
50 - 59%	0.0	0.0	0.2	0.7	0.0
60 - 69%	0.0	0.0	0.2	0.0	0.0
Total	100.0	100.0	100.0	100.0	100.0
Number of responding schools**	536	4,374	11,130	2,682	150
Item 97. American Indian					
None	66.3	96.3	80.6	86.5	50.4
0 - 9%	33.7	3.7	15.3	12.0	49.6
10 - 19%	0.0	0.0	2.8	0.0	0.0
20 - 29%	0.0	0.0	0.6	0.0	0.0
30 - 39%	0.0	0.0	0.2	0.0	0.0
40 - 49%	0.0	0.0	0.2	0.0	0.0
90 - 99%	0.0	0.0	0.0	0.8	0.0
All	0.0	0.0	0.2	0.8	0.0
Total	100.0	100.0	100.0	100.0	100.0
Number of responding schools**	508	4,354	11,246	2,640	149

*For exact wording of this question see Appendix--options to items where there were no responses were omitted for convenience

**Weighted to reproduce the national population of schools

(Table continued on next page)

Table 2-17 (continued)

Distribution of schools in each composite group by
ethnic origin of students (GSC 95, 96, 97, 98, and 99)

	Percentage of schools				
Item 98. Negro	Group 1 Cities	Group 2 SE	Group 3 NE & W	Group 4 Non-Pub.	Group 5 Vocatl.
None	35.4	70.6	71.5	63.5	31.9
0 - 9%	26.6	3.3	23.2	32.2	57.5
10 - 19%	7.5	1.3	2.6	1.8	3.5
20 - 29%	11.1	0.0	0.2	0.0	3.5
30 - 39%	0.9	0.0	0.2	0.0	1.5
40 - 49%	0.5	0.0	0.0	0.0	1.5
50 - 59%	0.0	0.0	0.0	0.0	0.5
60 - 69%	0.0	0.0	0.2	0.0	0.0
70 - 79%	3.6	0.0	0.0	0.0	0.0
80 - 89%	3.2	0.0	0.0	0.0	0.0
90 - 99%	6.7	0.4	0.0	0.0	0.0
All	4.4	24.3	2.2	2.5	0.0
Total	100.0	100.0	100.0	100.0	100.0
Number of responding schools**	632	4,734	11,514	3,010	198
Item 99. Other "Minority" Group (specify)					
None	38.7	93.5	79.6	59.6	0.0
0 - 9%	33.9	3.7	7.2	15.1	54.3
10 - 19%	0.0	1.9	0.9	2.8	43.5
20 - 29%	1.6	0.0	3.8	1.6	1.1
30 - 39%	0.0	0.9	0.9	3.2	1.1
40 - 49%	11.7	0.0	0.9	7.2	0.0
50 - 59%	0.0	0.0	1.0	1.4	0.0
60 - 69%	0.0	0.0	1.3	0.0	0.0
70 - 79%	13.3	0.0	1.0	0.0	0.0
80 - 89%	0.8	0.0	1.2	1.5	0.0
90 - 99%	0.0	0.0	1.7	6.1	0.0
All	0.0	0.0	0.5	1.4	0.0
Total	100.0	100.0	100.0	100.0	100.0
Number of responding schools**	127	2,257	4,291	1,413	92
Total number of schools**	665	5,282	12,664	3,633	200
Number of schools in sample	107	212	468	165	35

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*For exact wording of this question see Appendix--options to items where there were no responses were omitted for convenience

**Weighted to reproduce the national population of schools

School Plant

Table 2-18 shows the distribution of age of the main building of the school plant (GSC-33). The average age of the school building is noticeably lower in the Southeastern region, but there are fewer differences among the other groups of schools. It can be seen, however, that almost 30% of the non-public school buildings are 45 years old or older, and that over a quarter of the vocational high schools are less than five years old. Table 2-19 shows the time since the last renovation including painting (GSC-34). There does not seem to be a great deal of difference among the categories of schools here except that the vocational high schools tend to have been more recently renovated.

Table 2-18

Distribution of schools in each composite group by
age of the main building of the school plant (GSC-33)

Item 33. About how old is the main building of your school plant? (as indicated below)*

	Percentage of schools				
	Group 1 Cities	Group 2 SE	Group 3 NE & W	Group 4 Non-Pub.	Group 5 Vocatl.
1. Less than 5 years old	9.5	15.8	13.3	19.0	26.5
2. 5-9 years	6.2	18.8	10.9	12.9	0.0
3. 10-14 years	5.7	8.8	4.6	8.1	0.0
4. 15-19 years	0.6	6.4	4.1	1.5	0.5
5. 20-24 years	19.2	13.0	9.6	3.9	12.5
6. 25-29 years	9.0	7.0	9.6	6.4	11.0
7. 30-34 years	16.1	16.0	11.2	11.4	23.0
8. 35-39 years	12.8	6.8	12.2	2.9	0.0
9. 40-44 years	4.4	2.7	9.7	4.3	11.5
10. 45 years or more	16.5	4.7	14.9	29.7	15.0
Total	100.0	100.0	100.0	100.0	100.0
Number of responding schools**	665	5,282	12,615	3,591	200
Total number of schools**	665	5,282	12,664	3,633	200
Number of schools in sample	107	212	468	165	35

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*For exact wording of this question see Appendix

**Weighted to reproduce the national population of schools

Table 2-19

Distribution of schools in each composite group by time since last major renovation (GSC-34)

Item 34. About how long since your school plant received its last major renovation? (Include painting if no reconstruction work was done.) Options are below.

	Percentage of schools				
	Group 1 Cities	Group 2 SE	Group 3 NE & W	Group 4 Non-Pub.	Group 5 Vocatl.
1. Less than 3 years ago	47.0	40.8	54.8	65.4	50.5
2. 3-5 years ago	28.6	29.2	18.3	9.2	25.0
3. 6-8 years ago	8.3	8.0	5.9	3.4	11.0
4. 9-11 years ago	3.3	5.6	2.5	3.5	11.0
5. 12-14 years ago	0.2	0.0	1.9	0.0	0.5
6. 15-17 years ago	0.0	0.0	1.0	0.6	0.0
7. 18-20 years ago	0.0	0.4	0.2	0.0	0.0
8. 21-23 years ago	0.0	0.4	0.2	0.0	1.0
9. 24 or more years ago	0.0	1.1	1.3	0.0	0.0
10. Has never had a major renovation	12.7	14.4	14.1	17.9	1.0
Total	100.0	100.0	100.0	100.0	100.0
Number of responding schools*	665	5,183	12,600	3,591	200
Total number of schools*	665	5,282	12,664	3,633	200
Number of schools in sample	107	212	468	165	35

*Weighted to reproduce the national population of schools

The Library

Table 2-20 shows the number of books in the library (GSC-32). The differences among the groups here are quite substantial. Of course, the number of books in the library will be quite highly associated with the size of the school. It is interesting to note that while the non-public schools are the smallest category of schools in terms of total enrollment, they are next to highest in terms of the size of the library. The non-public school students will be highest in terms of "books per student". The number of books in the vocational high school libraries is also small considering that they are largely non-rural schools, and most are in large cities.

Table 2-20

Distribution of schools in each composite group by number of books in school library (GSC-32)

Item 32. About how many books does your school have in its library? (as indicated below)

	Percentage of schools				
	Group 1 Cities	Group 2 SE	Group 3 NE & W	Group 4 Non-Pub.	Group 5 Vocatl.
1. Less than 300 books	0.0	2.0	2.7	2.6	10.0
2. 300-599 books	0.0	3.0	9.5	3.9	10.0
3. 600-899 books	3.0	4.9	6.7	1.6	0.0
4. 900-1199 books	3.4	11.1	9.9	3.5	10.0
5. 1200-1499 books	3.5	10.3	7.6	3.8	.5
6. 1500-1799 books	2.1	11.7	7.9	6.6	0.0
7. 1800-2099 books	.2	6.6	7.3	8.5	0.0
8. 2100-2399 books	0.0	3.2	7.4	8.1	25.0
9. 2400-2699 books	.3	5.3	3.9	5.4	11.0
10. 2700 or more books	87.6	41.8	37.1	56.0	33.5
Total	100.0	100.0	100.0	100.0	100.0
Number of responding schools*	662	5,205	12,372	3,484	200
Total number of schools*	665	5,282	12,664	3,633	200
Number of schools in sample	107	212	468	165	35

*Weighted to reproduce the national population of schools

The Teachers

Table 2-21 shows the distribution of number of teachers per school (GSC-43). There are tremendous differences in number of teachers per school for the different groups of schools. Over 91% of the schools in the largest cities have 27 or more teachers. Only 10% of the Southeastern schools are this large, as are 21% of the other regions, 12.3% of the non-public schools, and 35% of the vocational high schools. Table 2-22 shows the per cent of male teachers in each of the schools (GSC-46). It is very high for the vocational high schools and relatively low for the non-public high schools. The per cent of male teachers is noticeably higher for schools (not large city) outside of the Southeast. In regard to other characteristics of the faculty, it was found that the large city schools tended to have a considerably higher proportion of their teachers with Master's degrees or better. However, as contrasted with the other groups, they had a higher proportion of teachers who were not fully certified or not teaching in their major area. Teacher turnover was lowest among the vocational high schools, and the non-public schools. The average number years of teaching experience (GSC-58) is shown in Table 2-23. It can be seen that the level of teaching experience is lowest for the regions other than the Southeast and highest for the large city schools, the non-public schools, and the vocational high schools.

Table 2-21

Distribution of schools in each composite group by number of teachers per school (GSC-43)

Item 43. About how many full-time teachers are on your grades 9-12 teaching staff this school year*, not counting counselors and administrative personnel? (Include the number of full-time equivalents of part-time teachers.)

	Percentage of schools				
	Group 1 Cities	Group 2 SE	Group 3 NE & W	Group 4 Non-Pub.	Group 5 Vocatl.
1. 2 or fewer	0.0	0.0	1.2	1.8	0.0
2. 3-5	0.0	10.6	15.0	19.2	0.0
3. 6-8	0.0	19.3	21.0	21.2	0.0
4. 9-11	0.0	24.4	14.1	15.4	25.0
5. 12-14	0.0	12.6	8.5	12.1	0.0
6. 15-17	6.0	7.9	5.7	7.6	10.0
7. 18-20	0.0	6.6	6.4	4.3	30.0
8. 21-23	3.0	5.6	4.2	3.3	0.0
9. 24-26	0.0	3.1	2.6	2.8	0.0
10. 27 or more	91.0	9.9	21.3	12.3	35.0
Total	100.0	100.0	100.0	100.0	100.0
No. of responding schools**	665	5,282	12,612	3,633	200
Total number of schools**	665	5,282	12,664	3,633	200
Number of schools in sample	107	212	468	165	35

*School year 1959-1960

**Weighted to reproduce the national population of schools

Table 2-22

Distribution of schools in each composite group by percentage of male teachers (GSC-46)

Item 46. About what percentage of your full-time grades 9-12 teachers are men? (as indicated below)

	Percentage of schools				
	Group 1 Cities	Group 2 SE	Group 3 NE & W	Group 4 Non-Pub.	Group 5 Vocatl.
1. None	0.0	0.4	0.0	24.1	0.0
2. 0 - 9%	0.2	1.2	1.1	16.9	1.0
3. 10 - 19%	0.3	3.1	0.8	5.1	1.5
4. 20 - 29%	5.5	14.0	1.7	5.0	1.0
5. 30 - 39%	16.9	17.1	4.8	5.0	0.0
6. 40 - 49%	20.8	30.2	13.2	4.9	1.0
7. 50 - 59%	37.2	19.1	24.2	6.7	12.0
8. 60 - 69%	14.7	8.8	28.0	1.2	1.0
9. 70 - 79%	3.8	5.0	15.6	3.2	1.5
10. 80 - 89%	0.6	0.8	7.7	1.7	22.0
11. 90 - 99%	0.0	0.4	0.6	3.1	4.0
12. All	0.0	0.0	2.3	23.0	55.0
Total	100.0	100.0	100.0	100.0	100.0
No. of responding schools*	645	5,221	12,599	3,611	200
Total number of schools*	665	5,282	12,664	3,633	200
Number of schools in sample	107	212	468	165	35

*Weighted to reproduce the national population of schools

Table 2-23

Distribution of schools in each composite group by average number years of teaching experience (GSC-58)

Item 58. What is the average number of years of full-time teaching experience among your current full-time teaching staff (Grades 9-12)? (as indicated below)

	Percentage of schools				
	Group 1 Cities	Group 2 SE	Group 3 NE & W	Group 4 Non-Pub.	Group 5 Vocatl.
1. Under 3 years	0.0	0.0	2.3	0.6	0.0
2. 3-5 years	0.0	3.8	10.2	5.4	25.1
3. 6-8 years	3.9	17.7	23.9	15.1	0.0
4. 9-11 years	16.9	31.6	29.8	18.2	11.6
5. 12-14 years	29.7	27.6	17.2	20.2	24.6
6. 15 years or more	49.5	19.2	16.5	40.4	38.7
Total	100.0	100.0	100.0	100.0	100.0
No. of responding schools*	644	5,224	12,641	3,609	199
Total number of schools*	665	5,282	12,664	3,633	200
Number of schools in sample	107	212	468	165	35

*Weighted to reproduce the national population of high schools

The Principal

Information was also gathered about the characteristics of the principal of each school. No outstanding differences were found regarding the principals of the different groups of schools except that there were virtually no women principals except in the large cities and non-public high schools. Almost 13% of large city high schools have female principals, and 56% of the non-public high schools. The principals of the non-public high schools had not had as many years' experience as principal as had those for the other four groups. A tendency was found for the principals to be considerably older in the larger city high schools, and vocational high schools. A very high proportion of all the school principals have Master's degrees or better. Information on the highest degrees held by principals (GSC-106) is shown in Table 2-24. In the large city high schools, 14% of the principals have a Doctor's degree, and over 99% have a Master's degree or better. Less than 20% of the Southeast, other regions, and non-public high school principals have less than a Master's degree, but 48% of vocational high school principals have less than a Master's degree. Table 2-25 shows the number of credit hours that the principals have in education courses (GSC-107). It can be seen that outside of the vocational high schools very few of the principals have had less than 20 hours in education courses. In the non-public high schools the average principal has had over 35 hours in education courses.

Table 2-24

Distribution of schools in each composite group by the highest earned degree held by the principal (GSC-106)

Item 106. What is the highest earned college degree you hold? (as indicated below)*

	Percentage of schools				
	Group 1 Cities	Group 2 SE	Group 3 NE & W	Group 4 Non-Pub.	Group 5 Vocatl.
1. No college degree	0.0	0.0	0.2	0.7	0.0
3. Bachelor's degree or 4-yr teachers college degree	0.3	17.1	16.8	17.6	47.5
4. Master's degree	67.6	73.4	71.3	69.2	47.5
5. Professional diploma (Master's + 30 grad. hours)	18.2	7.6	9.6	8.3	3.0
6. Doctor's degree	13.8	1.5	1.6	4.2	2.0
7. Other (specify)	0.2	0.4	0.6	0.0	0.0
Total	100.0	100.0	100.0	100.0	100.0
No. of responding schools**	664	5,262	12,644	3,613	200
Total number of schools**	665	5,282	12,664	3,633	200
Number of schools in sample	107	212	468	165	35

*For exact wording of this question see Appendix

**Weighted to reproduce the national population of schools

Table 2-25

Distribution of schools in each composite group by the number of the principal's credit hours in education courses (GSC-107)

Item 107. About how many credit hours in education courses do you have? (as indicated below)

	Percentage of schools				
	Group 1 Cities	Group 2 SE	Group 3 NE & W	Group 4 Non-Pub.	Group 5 Vocatl.
1. 0-9	0.0	0.0	0.2	8.3	25.0
2. 10-19	0.3	2.3	0.6	3.6	10.5
3. 20-29	2.7	5.1	6.5	21.3	0.0
4. 30-39	14.4	16.8	24.1	20.4	0.5
5. 40-49	22.3	26.8	19.9	16.1	2.0
6. 50 or more	60.3	49.0	48.7	30.3	62.0
Total	100.0	100.0	100.0	100.0	100.0
No. of responding schools*	663	5,282	12,602	3,613	200
Total number of schools*	665	5,282	12,664	3,633	200
Number of schools in sample	107	212	468	165	35

*Weighted to reproduce the national population of schools

Length of Class Periods

There are appreciable differences in the average number of periods per day for the different groups of schools. The smallest number is for Southeastern schools with an average of six periods per day. Vocational high schools average nearly eight periods per day, the other groups average about six and a half. Table 2-26 shows the distribution of length of periods for the five groups of schools (GSC-8). It can be seen that the vocational high schools tend to have very short periods, and the large city and non-public schools also have short periods. The typical non-public or large city high school has periods of 45 minutes. On the other hand, nearly all of the Southeastern schools and over half of the schools in other regions have periods of 55 minutes or longer.

Table 2-26

Distribution of schools in each composite group by average length of class period (GSC-8)

Item 8. What is the usual length of a class period for grades 9-12? (as indicated below)

	Percentage of schools				
	Group 1 Cities	Group 2 SE	Group 3 NE & W	Group 4 Non-Pub.	Group 5 Vocatl.
1. 30 minutes or less	0.0	0.0	0.0	0.0	0.0
2. About 35 minutes	0.0	0.0	0.0	0.0	0.0
3. About 40 minutes	25.9	0.0	8.7	18.6	55.0
4. About 45 minutes	33.6	5.2	19.8	43.7	45.0
5. About 50 minutes	5.0	10.2	18.8	21.4	0.0
6. About 55 minutes or more	35.5	84.5	52.7	16.3	0.0
Total	100.0	100.0	100.0	100.0	100.0
No. of responding schools*	664	5,282	12,528	3,573	200
Total number of schools*	665	5,282	12,664	3,633	200
Number of schools in sample	107	212	468	165	35

*Weighted to reproduce the national population of schools

Average Class Size

Table 2-27 shows the distribution of class size in science and mathematics (GSC-9) for each group of schools. It can be seen that there is relatively little variance in average class size here among the large city schools. Very few of these schools have less than 24 per class, and very few have more than 35. It can be seen that average class size is very substantially lower in the vocational high schools, and is lowest in the regions other than Southeast. Average class size is highly negatively correlated with school size. As a matter-of-fact, nearly all schools with class sizes below the national average are small schools that have only one class of each type. In the regions outside of the Southeast it can be seen that nearly all of the schools have class sizes smaller than two-thirds or more of the large city high schools. Because of this extreme confounding of class size and school size it can easily be seen how meaningless it is to make simple comparisons between national samples of schools that differ in size of school and class size. Nearly all large schools have a large average class size, and nearly all small schools have a small average class size. Furthermore, nearly all schools who have small classes are small schools. Table 2-28 shows class size for classes other than science or mathematics (GSC-10). About the same distribution pattern is seen here. It may be seen that the average class size in other than science and mathematics tends to run somewhat larger than those in science and mathematics. Group 3 still tends to run lowest followed closely by the vocational group.

Table 2-27

Distribution of schools in each composite group by class size in science and mathematics (GSC-9)

Item 9. What size is your average instructional class in science and mathematics (grades 9-12)? (as indicated below)

	Percentage of schools				
	Group 1 Cities	Group 2 SE	Group 3 NE & W	Group 4 Non-Pub.	Group 5 Vocatl.
1. 5 or less	0.0	0.0	0.0	2.5	0.0
2. 6-8	0.0	0.0	1.6	2.2	0.0
3. 9-11	0.0	2.2	4.2	5.8	0.0
4. 12-14	0.0	4.4	6.4	5.8	0.0
5. 15-17	0.0	3.8	14.3	5.7	25.1
6. 18-20	6.2	10.5	17.3	15.5	20.1
7. 21-23	3.1	11.5	14.7	11.2	11.0
8. 24-26	21.3	20.8	24.8	8.1	11.6
9. 27-29	37.4	20.1	10.0	10.0	4.0
10. 30-32	18.5	17.9	4.8	16.9	24.7
11. 33-35	11.3	7.1	1.4	10.6	3.5
12. 36 or more	2.2	1.6	0.5	5.8	0.0
Total	100.0	100.0	100.0	100.0	100.0
No. of responding schools*	643	5,240	12,644	3,611	199
Total number of schools*	665	5,282	12,664	3,633	200
Number of schools in sample	107	212	468	165	35

*Weighted to reproduce the national population of schools

Table 2-28

Distribution of schools in each composite group by class size in non-science courses (GSC-10)

Item 10. What is your average instructional class size in non-science courses (grades 9-12)? (as indicated below)

	Percentage of schools				
	Group 1 Cities	Group 2 SE	Group 3 NE & W	Group 4 Non-Pub.	Group 5 Vocatl.
1. 8 or fewer	0.0	0.0	1.2	4.7	0.0
2. 9-11	0.0	0.0	1.8	3.1	0.0
3. 12-14	0.0	4.0	5.2	6.8	0.0
4. 15-17	0.0	2.6	8.9	5.2	35.2
5. 18-20	0.0	6.3	14.8	11.3	11.0
6. 21-23	6.0	9.1	12.8	5.6	0.0
7. 24-26	6.5	15.4	20.3	12.0	10.5
8. 27-29	29.8	17.8	19.8	10.4	15.6
9. 30-32	36.7	24.6	11.5	11.6	25.2
10. 33-35	15.0	15.8	3.6	17.0	1.5
11. 36-38	6.0	2.8	0.2	6.6	1.0
12. 39 or more	0.0	1.6	0.0	5.8	0.0
Total	100.0	100.0	100.0	100.0	100.0
No of responding schools*	665	5,240	12,582	3,561	199
Total number of schools*	665	5,282	12,664	3,633	200
Number of schools in sample	107	212	468	165	35

*Weighted to reproduce the national population of schools

Homework

In Table 2-29 can be seen the distribution of homework assigned (GSC-11). The amount of homework assigned tends to be higher in the non-public high schools. It is very noticeably lower in the vocational schools than in the other four types of schools. It was also found that study halls are very infrequent in the vocational high schools, and are most frequent in the non-public high schools, and the public high schools outside of the large cities and outside of the Southeast.

Provisions for Superior Students

It was found that 75% of the large city schools have some sort of accelerated curriculum for superior students (GSC-15). This percentage is 36 for the Southeast, 37 for the other regions, 43 for the non-public high schools, and 11 for the vocational high schools. Table 2-30 shows the distribution of opportunity for students to obtain advanced placement and/or credit in college (GSC-16). Of the large city high schools 33% say that they offer one or more courses that use

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the syllabuses of the advanced placement program of the College Entrance Examination Board or offer their own advanced courses to superior students, and they take the advanced placement tests of the College Entrance Examination Board. This percentage is 6.5% for the Southeast schools, 8.8% for the other region schools, 13.2% for the non-public schools, and 0.5% for the vocational high schools.

Table 2-29

Distribution of schools in each composite group by
average amount of homework (GSC-11)

Item 11. What is the average amount of homework per day which a student in grades 9-12 in your school is expected to do? (as indicated below)

	Percentage of schools				
	Group 1 Cities	Group 2 SE	Group 3 NE & W	Group 4 Non-Pub.	Group 5 Vocatl.
1. Students not usually given homework	0.0	1.5	1.2	0.6	20.0
2. Less than one hour	3.3	6.7	9.7	1.2	36.0
3. 1-2 hours	56.0	59.6	66.9	25.3	42.5
4. 2-3 hours	33.9	27.9	19.1	53.5	1.5
5. 3-4 hours	6.8	3.9	2.9	16.9	0.0
6. 4-5 hours	0.0	0.4	0.2	1.9	0.0
7. More than 5 hours	0.0	0.0	0.0	0.6	0.0
Total	100.0	100.0	100.0	100.0	100.0
No. of responding schools*	665	5,282	12,592	3,561	200
Total number of schools*	665	5,282	12,664	3,633	200
Number of schools in sample	107	212	468	165	35

*Weighted to reproduce the national population of high schools

Table 2-30

Distribution of schools in each composite group by
the type of advanced placement practice (GSC-16)

Item 16. What opportunity is there for students in your school to obtain advanced placement and/or credit in college? (as indicated below)*

	Percentage of schools				
	Group 1 Cities	Group 2 SE	Group 3 NE & W	Group 4 Non-Pub.	Group 5 Vocatl.
1. Courses using syllabuses of the Advanced Placement Program of the CEEB	4.7	0.8	2.0	2.4	0.0
2. Our own advanced courses Advanced Placement Tests of the CEEB to superior students	28.3	5.5	6.8	10.8	0.5
3. No special advanced courses, but superior students take Advanced Placement Tests of CEEB	22.7	27.5	18.8	19.6	11.0
4. No CEEB but special arrangement with colleges for our superior students	17.3	5.5	9.7	18.3	0.5
5. No special opportunity for advanced placement is available	33.7	62.7	64.9	52.5	88.0
Total	100.0	100.0	100.0	100.0	100.0
No. of responding schools**	618	5,218	12,444	3,584	200
Total number of schools**	665	5,282	12,664	3,633	200
Number of schools in sample	107	212	468	165	35

*For exact wording of this question see Appendix
**Weighted to reproduce the national population of schools

Tracks and Homogeneous Grouping

Of the large city high schools, 82% had some form of homogeneous grouping of students in the classes to take care of different ability levels (GSC-39). This percentage was 49% for the Southeast schools, 54% for the other regions, 70% for the non-public high schools, and 24% for the vocational high schools. Table 2-31 shows the number of tracks for each school (GSC-40). One-third of the large city

Table 2-31

Distribution of schools in each composite group by tracks in grades 9-12 (GSC-40)

Item 40. How many tracks does your school have in grades 9-12? (as indicated below)

	Percentage of schools				
	Group 1 Cities	Group 2 SE	Group 3 NE & W	Group 4 Non-Pub.	Group 5 Vocatl.
1. One track	15.9	15.6	17.7	17.6	35.5
2. One track with electives	17.8	47.1	30.3	31.3	0.0
3. Two tracks	3.5	11.4	14.8	23.8	7.2
4. Three tracks	28.8	16.3	22.1	21.2	4.4
5. Four or more tracks	34.0	9.6	15.1	6.1	52.9
Total	100.0	100.0	100.0	100.0	100.0
No. of responding schools*	642	4,859	12,054	3,402	180
Total number of schools*	665	5,282	12,664	3,633	200
Number of schools in sample	107	212	468	165	35

*Weighted to reproduce the national population of schools

high schools have 4 or more tracks. The percentage for Southeastern schools is 10, 15 for other regions, 6 for non-public schools, and 53 for vocational high schools.

Table 2-32 reports high school policies on acceleration (GSC-41). Some form of acceleration is permitted by 67% of large city schools. The percentage for Southeast schools is 36. For the other regions, it is 24%. It is 23% for the non-public high schools, and only 3.5% for the vocational high schools.

Table 2-32

Distribution of schools in each composite group by acceleration in school (GSC-41)

Item 41. What is the policy on acceleration in your school? (as indicated below)*

	Percentage of schools				
	Group 1 Cities	Group 2 SE	Group 3 NE & W	Group 4 Non-Pub.	Group 5 Vocatl.
1. Bright children are permitted to graduate from high school in less than the normal time by taking summer courses	48.8	16.7	9.1	11.1	1.5
2. Bright children are permitted to graduate from high school in less than the normal time by taking more than the minimal number of courses during the school year	46.9	21.6	14.0	12.8	1.5
3. Bright children are permitted to graduate from high school in less than the normal time by taking exams for credit in courses they have not taken	3.8	0.4	0.8	0.6	0.0
4. No acceleration is permitted	33.0	64.2	76.0	77.0	96.5
5. Other	2.0	4.2	2.7	1.7	0.5
6. Permitted, means not specified	4.1	0.0	1.4	1.1	0.0
7. Special classes cover more	0.0	0.0	0.2	1.9	0.5
No. of responding schools**	665	5,261	12,664	3,633	200
Total number of schools**	665	5,282	12,664	3,633	200
Number of schools in sample	107	212	468	165	35

*For exact wording of this question see Appendix

**Weighted to reproduce the national population of schools

Promotion and Report Cards

Table 2-33 shows the policy regarding promotion of slow-learners (GSC-42). Virtually none of the schools report a policy of 100% promotion. The groups of public schools showed little difference in the kind of grades assigned. However, the non-public schools were somewhat more prone to assign numerical grades, and less prone to assign letter grades. Non-public schools are also somewhat more prone to have written descriptive paragraphs, and conferences with the parents although this amounted to only 15% for paragraphs, and 24% for conferences with the parents. Table 2-34 shows what the grades in subjects generally represent (GSC-17) in the different groups of schools. The most common response is that grades primarily represent level of subject matter achievement. This was marked by close to half of the non-vocational high schools, although this was a little higher among the non-public schools. In the vocational high schools 92% checked this category. The non-public high schools were less prone than the three groups of comprehensive high schools to say that grades primarily represent level of achievement relative to the achievement of classmates. On the other hand, the non-public schools were more likely to report that they represent primarily achievement in relation to ability.

Table 2-33

Distribution of schools in each composite group by promotion of slow learners (GSC-42)

Item 42. What is the policy in your school regarding promotion of slow learners? (as indicated below)*

	Percentage of schools				
	Group 1 Cities	Group 2 SE	Group 3 NE & W	Group 4 Non-Pub.	Group 5 Vocatl.
1. Pupil must repeat courses he has failed	43.0	42.9	27.9	27.4	54.7
2. Pupil must repeat courses he has failed if he is to receive credit for them	42.5	50.5	59.2	57.4	33.7
3. Policy is 100% promotion	0.0	1.6	2.7	1.7	0.0
5. Two or more subject failures result in repeat grade*	2.0	0.0	0.6	1.0	0.0
6. Failures individually handled*	7.1	2.4	4.4	7.8	0.5
4. Other	5.6	2.6	5.8	4.8	11.0
No. of responding schools**	645	5,261	12,597	3,633	199
Total number of schools**	665	5,282	12,664	3,633	200
Number of schools in sample	107	212	468	165	35

*For exact wording of this question see Appendix--options 5 and 6 were not in the original wording

**Weighted to reproduce the national population of schools

Table 2-34

Distribution of schools in each composite group by grades in subjects (GSC-17)

Item 17. What do the grades in subjects generally represent? (as indicated below)*

	Percentage of schools				
	Group 1 Cities	Group 2 SE	Group 3 NE & W	Group 4 Non-Pub.	Group 5 Vocatl.
1. Primarily level of subject matter achievement	45.0	48.6	51.4	58.8	91.5
2. Primarily level of achievement relative to the achievement of classmates	20.7	24.1	23.2	6.7	1.0
3. Primarily achievement in relation to ability	10.0	19.3	18.1	25.6	6.0
4. Separate grades for achievement and achievement in relation to ability are given for each course	13.5	3.6	3.6	5.7	0.0
5. Separate grades for achievement and achievement relative to the achievement of classmates for each course	3.0	1.9	2.3	0.6	0.5
6. Other	7.6	2.5	1.4	2.6	1.0
7. Study habits and attitudes graded separately*	0.2	0.0	0.0	0.0	0.0
Total	100.0	100.0	100.0	100.0	100.0
No. of responding schools**	662	5,093	12,360	3,613	199
Total number of schools*	665	5,282	12,664	3,633	200
Number of schools in sample	107	212	468	165	35

*For exact wording of this question see Appendix--option 7 was not in the original wording

**Weighted to reproduce the national population of schools

Religious Education

Table 2-35 shows whether the school system provides for religious education (GSC-23). While zero per cent of the large city schools marked that they have religious education within the regular curriculum, this was indicated by 16% of the Southeast region schools, 2.7% of the other region schools, 86% of the non-public schools, and 10% of the vocational high schools. A small minority of the public schools provide for religious education by released time, although about three-fourths of the public high schools indicated that they did not have any religious education. As can be seen in the next table, religious clubs are found in 25% of the large city schools, 7.5% of the Southeastern region schools, 6.4% of the other regions, 66% of the non-public schools, and 19% of the vocational high schools.

Table 2-35

Distribution of schools in each composite group by religious education (GSC-23)

Item 23. Does the school system provide for religious education? (as indicated below)*

	Percentage of schools				
	Group 1 Cities	Group 2 SE	Group 3 NE & W	Group 4 Non-Pub.	Group 5 Vocatl.
1. Yes, within the regular curriculum	0.0	15.8	2.7	85.5	10.0
2. Yes, by released time, for all pupils	6.6	3.2	10.6	4.4	21.5
3. Yes, by released time, but pupils excused if alien to their religion	20.6	6.4	6.1	0.6	23.5
4. No	72.8	74.6	80.6	9.5	45.0
Total	100.0	100.0	100.0	100.0	100.0
No. of responding schools**	632	5,187	12,642	3,633	200
Total number of schools**	665	5,282	12,664	3,633	200
Number of schools in sample	107	212	468	165	35

*For exact wording of this question see Appendix

**Weighted to reproduce the national population of schools

Extra-Curricular Activities

Table 2-36 shows the proportion of the schools in each group having various extra-curricula activities offered by the school (GSC-38). There are many marked and systematic differences among groups here. The large city high schools are relatively higher in student government, school magazine and/or annual, orchestra or band, glee club, national honor society, subject matter clubs, chess club, hobby clubs, debate, military cadets, and service clubs. Much of this, of course, is because these schools are much larger than the schools in the other groups. In the following activities the public high schools outside of the cities are about as high as those in the cities: inter-school athletics for boys and girls, intramural athletics for boys and girls, drama and plays, and dances. Very few of the schools say that they have fraternities, sororities or other exclusive social clubs. This percentage is 3.0 for the large city schools, 0.8 for the Southeastern region schools, 1.2 for the other regions, 1.9 for the non-public schools, and zero for the vocational high schools.

Table 2-36
Distribution of schools in each composite group by
extra-curricular activities (GSC-38)

Item 38. Which of the following extra-curricular activities are offered by your school? Mark as many as apply. (as indicated below)*

	Percentage of schools				
	Group 1 Cities	Group 2 SE	Group 3 NE & W	Group 4 Non-Pub.	Group 5 Vocatl.
Student government	91.1	64.6	73.6	64.6	64.5
School newspaper	93.6	67.0	81.4	69.8	54.0
School magazine and/or annual	93.5	53.5	72.1	68.1	42.5
Inter-school athletics--boys	99.1	97.2	98.0	66.4	76.0
Inter-school athletics--girls	56.0	71.8	42.2	35.8	1.0
Intramural athletics--boys	69.6	65.5	68.0	64.2	85.0
Intramural athletics--girls	73.5	61.7	65.3	50.2	37.5
Orchestra and/or band	99.2	55.4	81.7	41.7	87.0
Glee club	90.6	69.2	79.7	81.7	56.0
Fraternities, sororities, or other similar clubs	3.0	0.8	1.2	1.9	0.0
National honorary society	75.9	58.6	46.0	38.5	40.0
Subject matter clubs (as math, music, Latin, etc.)	90.7	60.2	54.9	62.4	14.5
Chess club	40.9	3.4	12.0	11.8	21.5
Hobby clubs (stamp, model airplane, HI-FI, etc.)	50.5	12.9	18.9	24.0	29.0
Drama, plays	84.2	70.6	82.4	79.5	50.0
Debate	45.2	18.7	24.5	36.0	0.0
Dances	75.3	40.0	74.7	75.2	87.5
Military cadets	28.2	0.7	0.9	6.5	1.0
Service clubs (Key, wheel, Hi-Y, etc.)	74.0	38.5	28.8	17.9	41.5
Religious clubs (Newman, etc.)	25.3	7.5	6.4	66.1	19.0
Other	30.9	9.7	10.4	15.8	2.0
Total no. of schools in group**	665	5,282	12,604	3,633	200
Number of schools in sample	107	212	468	165	35

*For exact wording of this question see Appendix
**Weighted to reproduce the national population of schools

Absenteeism

Table 2-37 shows the average daily per cent of absenteeism during the current school year (GSC-29). Absenteeism tends to be high in the vocational high schools, and markedly low in the non-public high schools. It is somewhat higher in the large cities than in the other groups of comprehensive public high schools.

Table 2-37

Distribution of schools in each composite group by daily percentage of absenteeism (GSC-29)

Item 29. Estimate the average daily percentage of absenteeism in grades 9-12 in your school over the current school year. (as indicated below)

	Percentage of schools				
	Group 1 Cities	Group 2 SE	Group 3 NE & W	Group 4 Non-Pub.	Group 5 Vocatl.
1. 2% or less	9.0	10.2	15.3	50.2	0.0
2. 3-5%	22.4	39.6	52.0	41.7	10.0
3. 6-8%	44.6	27.9	29.7	3.6	44.5
4. 9-11%	15.5	16.9	2.2	3.9	42.0
5. 12-14%	8.0	4.2	0.4	0.0	3.5
6. 15-17%	0.5	0.8	0.2	0.0	0.0
7. 18-20%	0.0	0.4	0.2	0.0	0.0
8. 21-23%	0.0	0.0	0.0	0.0	0.0
9. 24-27%	0.0	0.0	0.0	0.0	0.0
10. 28% or more	0.0	0.0	0.0	0.6	0.0
Total	100.0	100.0	100.0	100.0	100.0
No. of responding schools*	665	5,282	12,644	3,583	200
Total number of schools*	665	5,282	12,664	3,633	200
Number of schools in sample	107	212	468	165	35

*Weighted to reproduce national population of schools

Delinquency

Table 2-38 shows the percentage of students required to appear before juvenile court for one or more offenses (GSC-69). It can be seen that this is lowest for the non-public high schools and highest for the vocational high schools.

Table 2-38

Distribution of schools in each composite group by appearance before juvenile courts (GSC-69)

Item 69. During the last school year, about what percentage of your students in grades 9-12 were required to appear before juvenile courts for one or more offenses? (as indicated below)*

	Percentage of schools				
	Group 1 Cities	Group 2 SE	Group 3 NE & W	Group 4 Non-Pub.	Group 5 Vocatl.
1. 1%	62.7	75.7	59.5	84.0	46.0
2. 2%	13.7	16.2	23.1	10.7	14.0
3. 3%	8.8	4.0	5.2	3.5	1.5
4. 4%	3.8	2.4	5.2	0.0	1.5
5. 5%	3.9	1.6	3.9	0.0	11.0
6. 6%	3.7	0.0	2.5	0.0	0.0
7. 7%	3.4	0.0	0.0	0.0	25.5
8. 8%	0.0	0.0	0.0	0.0	0.5
9. 9% or more	0.0	0.0	0.6	1.7	0.0
Total	100.0	100.0	100.0	100.0	100.0
No. of responding schools**	637	2,614	8,628	1,145	200
Total number of schools**	665	5,282	12,664	3,633	200
Number of schools in sample	107	212	468	165	35

*For exact wording of this question see Appendix
**Weighted to reproduce the national population of schools

Dropout

Tables 2-39 and 2-40 show the dropout rate for boys and girls (GSC-70 and -71). The dropout rate here is extremely low for boys in the non-public high schools, and is virtually zero for girls in the non-public high schools. The dropout rate for boys and girls is the same in the large cities, but the dropout rate for girls tends to be a little lower than for boys in the Southeastern region and the other regions. The dropout rate for girls in the vocational high schools is a great deal lower than the dropout rate for boys in the vocational high schools. For both boys and girls the dropout rate is greater in the large city schools than in the other groups of public comprehensive high schools.

Table 2-39

Distribution of schools in each composite group by dropout rate, boys (GSC-70)

Item 70. About what percentage of all boys who enter your 10th grade drop out before graduation? (Do not include boys who transfer in your calculations.) (as indicated below)

	Percentage of schools				
	Group 1 Cities	Group 2 SE	Group 3 NE & W	Group 4 Non-Pub.	Group 5 Vocatl.
1. 0- 9%	38.7	48.3	71.8	89.8	35.0
2. 10-19%	28.7	29.7	21.7	8.5	0.0
3. 20-29%	13.6	14.0	4.8	0.0	48.5
4. 30-39%	9.2	5.9	1.6	0.8	11.0
5. 40-49%	7.4	1.7	0.0	0.9	2.5
6. 50% or more	2.4	0.4	0.0	0.0	3.0
Total	100.0	100.0	100.0	100.0	100.0
No. of responding schools*	663	5,282	12,603	2,634	200
Total number of schools*	665	5,282	12,664	3,633	200
Number of schools in sample	107	212	468	165	35

*Weighted to reproduce the national population of schools

Table 2-40

Distribution of schools in each composite group by dropout rate, girls (GSC-71).

Item 71. About what percentage of all girls who enter your 10th grade drop out before graduation? (Do not include girls who transfer in your calculations.) (as indicated below)

	Percentage of schools				
	Group 1 Cities	Group 2 SE	Group 3 NE & W	Group 4 Non-Pub.	Group 5 Vocatl.
1. 0- 9%	42.6	50.7	77.0	96.9	72.7
2. 10-19%	21.3	36.6	19.1	3.1	18.7
3. 20-29%	19.8	9.3	3.2	0.0	2.3
4. 30-39%	4.6	2.8	0.6	0.0	3.1
5. 40-49%	8.1	0.6	0.2	0.0	2.3
6. 50% or more	3.5	0.0	0.0	0.0	0.8
Total	100.0	100.0	100.0	100.0	100.0
No. of responding schools*	664	5,282	12,646	2,601	128
Total number of schools*	665	5,282	12,664	3,633	200
Number of schools in sample	107	212	468	165	35

*Weighted to reproduce the national population of schools

College Attendance Rate

Tables 2-41 and 2-42 show the principals' reports of the percentage of their boys and girls in the graduating senior class last year who went on to college (GSC-72 and -73). It can be seen that the rate is a great deal higher for the non-public high schools than it is for any of the other categories of schools. It is quite low for the vocational high schools, and is lower outside of the large cities for the other groups of comprehensive public high schools. It is noticeably lower in the Southeastern region than it is in the other regions. In terms of graduates going to college the public high schools compare more favorably with the non-public schools in terms of girl graduates than boy graduates.

Table 2-43 shows the rate at which the students were reported to go on specifically to junior college (GSC-75). The rate is quite low here, being less than 10% for most schools. The highest rate is for the graduates of the non-public schools. For the three groups of public comprehensive high schools the rate is highest for the groups of schools in regions other than the Southeast. It is notably low for the large city high schools.

Table 2-41

Distribution of schools in each composite group by percentage of boys going to college (GSC-72)

Item 72. About what percentage of the boys in your graduating senior class last year went on to college? (as indicated below)

	Percentage of schools				
	Group 1 Cities	Group 2 SE	Group 3 NE & W	Group 4 Non-Pub.	Group 5 Vocatl.
1. None	3.8	6.7	4.5	6.7	38.5
2. 0- 9%	3.2	27.4	14.5	6.0	37.0
3. 10-19%	31.2	19.8	16.1	3.9	12.5
4. 20-29%	23.1	17.2	20.9	7.8	0.5
5. 30-39%	4.5	11.6	12.5	9.2	11.5
6. 40-49%	7.1	8.4	11.4	3.9	0.0
7. 50-59%	3.6	3.4	11.4	11.5	0.0
8. 60-69%	8.3	3.2	4.1	6.4	0.0
9. 70-79%	6.7	1.1	2.7	9.1	0.0
10. 80-89%	5.0	0.4	0.3	9.8	0.0
11. 90-99%	3.6	0.4	0.8	17.7	0.0
12. All	0.0	0.4	0.9	8.0	0.0
Total	100.0	100.0	100.0	100.0	100.0
No. of responding schools*	662	5,204	12,509	2,592	200
Total number of schools*	665	5,282	12,664	3,633	200
Number of schools in sample	107	212	468	165	35

*Weighted to reproduce the national population of schools

Table 2-42

Distribution of schools in each composite group by
percentage of the girls going to college (GSC-73)

Item 73. About what percentage of the girls in your graduating senior class last year went on to college? (as indicated below)

	Percentage of schools				
	Group 1 Cities	Group 2 SE	Group 3 NE & W	Group 4 Non-Pub.	Group 5 Vocatl.
1. None	1.2	7.0	8.1	10.1	55.4
2. 0- 9%	8.6	20.1	15.6	9.7	23.4
3. 10-19%	22.4	22.2	18.1	5.4	20.4
4. 20-29%	28.9	16.9	17.9	18.3	0.0
5. 30-39%	5.8	16.4	15.9	9.2	0.0
6. 40-49%	8.5	5.8	8.3	4.4	0.0
7. 50-59%	11.6	3.9	9.5	9.2	0.0
8. 60-69%	1.9	4.6	4.0	6.2	0.0
9. 70-79%	2.8	2.0	2.5	7.2	0.8
10. 80-89%	4.6	0.8	0.3	3.1	0.0
11. 90-99%	0.6	0.4	0.0	10.2	0.0
12. All	3.0	0.0	0.8	6.8	0.0
Total	100.0	100.0	100.0	100.0	100.0
Number of responding schools*	664	5,204	12,531	2,701	128
Total number of schools*	665	5,282	12,664	3,633	200
Number of schools in sample	107	212	468	165	35

*Weighted to reproduce the national population of schools

Table 2-43

Distribution of schools in each composite group by
percentage of students going to junior college (GSC-75)

Item 75. Estimate the percentage of your grades 9-12 students who go on specifically to junior college (whether or not they intend to continue their college work elsewhere, later). (as indicated below)

	Percentage of schools				
	Group 1 Cities	Group 2 SE	Group 3 NE & W	Group 4 Non-Pub.	Group 5 Vocatl.
1. Less than 5%	73.8	66.3	65.9	63.5	85.4
2. 5- 9%	14.7	13.7	12.0	13.0	13.1
3. 10-14%	3.1	7.1	6.8	3.0	1.5
4. 15-19%	4.0	3.1	4.0	2.0	0.0
5. 20-24%	0.7	5.1	3.0	3.7	0.0
6. 25-29%	2.2	1.5	2.9	5.2	0.0
7. 30-34%	0.6	1.6	1.1	1.2	0.0
8. 35-39%	0.3	1.2	1.6	0.6	0.0
9. 40-44%	0.6	0.4	0.9	0.6	0.0
10. 45 or more	0.0	0.0	1.8	7.2	0.0
Total	100.0	100.0	100.0	100.0	100.0
Number of responding schools*	663	5,219	12,550	3,316	199
Total number of schools*	665	5,282	12,664	3,633	200
Number of schools in sample	107	212	468	165	35

*Weighted to reproduce the national population of schools

Summary

While it is probably futile to attempt to summarize all of the vast diversity of material to be found in the data presented in this chapter, the following section presents a number of the more salient observations within each of several categories. The reader is cautioned that any given statement is not necessarily true for all members of the category in question, but simply represents a perceived trend in the data.

Schools

Over 70% of the nation's public high schools are located in small towns, or rural areas. Such schools tend to be small in size, and tend to be smaller if they are non-public and larger if they are city located. The modal grade structure for the nation's high schools over-all is 9-12, 10-12 structures being found mostly in the cities and full range (K-12, 1-12) being more typical of the smaller schools, and the schools in the Southeastern areas. More than half of the schools in the Southeastern areas serve low-income or low-cost housing areas, as compared with only about a fifth in the cities. Non-public schools have a very low proportion of low cost, low income housing areas. There is some tendency for school plants to be newer in the Southeastern region, but there is a wide range for all groups on this variable. Over-all about 12% are over 45 years of age and about 14% under 5 years of age. Another characteristic of the school associated to some extent with school size is the size of the school library. However, non-public schools have a great many more books per student than do public high schools.

Teachers

Roughly half the high school teachers are males, though as might be expected, there is a higher proportion of men in vocational high schools than in other types of schools. Non-public schools seem to have a relatively high proportion of schools (about a quarter) which have all male teachers, and a similar proportion which have all female teachers. While the trend is probably more and more toward Master's degrees for teachers, it is in the cities where the largest proportion of teachers holding Master's degrees are found. Again, number of years of teaching experience is highest in the cities, followed by the non-public and vocational schools, and is a good bit smaller than these in the remainder of the schools. A number of men move from teaching into administration, but women principals are almost non-existent outside of the non-public schools, particularly in the large cities. A very high proportion of principals have a M.A. or higher degree, but this proportion is lowest in the vocational high schools. Principals tend to be older in the cities and vocational schools.

Policies and Practices

Southeastern schools tend to have fewer, but longer periods in their school day. Non-public and vocational schools tend to have periods of about 45 minutes and have more of them. Smaller class sizes in both math and science and in other subjects in general tend to be found in vocational high schools, and to some extent in the non-Southeastern region schools. There was some evidence in the data to suggest that schools with class sizes less than the national average tend to have only one section of each type of class. As might be expected, homework is practically non-existent in the vocational high schools, but ranks very high in the non-public schools.

While about three-quarters of the city schools have accelerated curricula available for superior students, approximately half that many have such provisions available in the other schools except the vocational schools where the percentage is only about 11%. More than four-fifths of the city schools and about 70% of non-public schools use homogeneous grouping. This ranges down to less than half for the regional schools, and about a quarter for vocational schools. Along these same lines, about two-thirds of the city schools permit early graduation in some form or another. Something like 50% of the Southeastern schools permit this, but only a quarter of the other regional schools and the non-public schools, and virtually none of the vocational high schools. About 86% of the non-public schools have religious instruction within the curriculum. This compares to none of the city schools, and only 3 to 16% of the others.

Non-public schools were found to be more likely to use a numerical grading system and to be more likely to use descriptive paragraphs or parent-teacher conferences as grading techniques. Although almost half or more of all schools say that grades are based primarily on the relationship to subject matter achievement, non-public schools tend more to use grades in relationship to ability, while public schools tend to use grades in relationship to classmates' performance.

Students

It was found that percentage of daily absenteeism and percentage of delinquency were high in the vocational schools, followed by the city schools, and lowest in the non-public schools. Similarly, with respect to dropout for both boys and girls, city schools led the way. High dropout rates also occurred for vocational school boys. With respect to percentage of students going to college, much higher percentages do so in the non-public schools, as contrasted to relatively low percentages in the vocational and Southeastern high schools.

Thus, it appears that the city schools tend to be the largest and are organized more into the junior-senior high school structure than is true in any of the other groups. They tend to have the most teachers, the largest class sizes, and the best prepared teachers, probably because of the increased requirements and economic advantages inherent in the large city areas. Correspondingly, they tend to be able to provide more diversified curricula and to make better provisions for special groups. On the other hand, they must compete with the usual big city problems of dropout, absenteeism, and delinquency.

Vocational high schools tend to have many of the same problems as well as the advantages and disadvantages of big city schools. This is probably because they are located in big cities and tend to serve relatively low-cost low-economic areas. However, they differ because of the nature of their curriculum and tend to have less well prepared teachers and principals, a high proportion of male teachers, less homework, less acceleration, and less provisions for special groups.

Non-public schools, on the other hand, tend to be somewhat more privileged, having the best areas of housing, with small schools, and well prepared teachers. They tend to assign more homework, to have more in shorter periods, which indicates a greater diversity of curriculum, and to use grading forms depending more on grades with relationship to ability.

Southeastern schools, on the other hand, tend to be small, to serve generally economically depressed areas, to be relatively low in percentage of students attending college, and to use acceleration and homogeneous grouping. Delinquency rates for girls are comparatively quite high for this group. Finally, the non-Southeastern schools tend to be pretty much a middle-of-the-road group on virtually all of the topics covered.

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Chapter 3

GUIDANCE RESOURCES AND COUNSELORS IN PUBLIC SENIOR HIGH SCHOOLS

An investigation of guidance and counseling resources was included as an integral part of Project Talent for a variety of reasons. It seemed likely that the guidance and counseling personnel would be those who would be quite important in using and applying much of the research that developed from Project Talent. Furthermore, the guidance profession appeared to be in a rapid state of growth, partly as a result of the National Defense Education Act, and, perhaps partly because of greater recognition of the need for the specialized services that could be offered by guidance and counseling personnel. For these reasons a variety of research needs were evident.

In addition to the above reasons, it appeared that the design of Project Talent offered a unique opportunity to undertake studies whereby it would be possible to test for the effects of guidance and counseling with a large number of other variables held constant. The data on the students' aptitudes and achievements, backgrounds, aspirations and plans offered a unique opportunity for developing criteria against which to compare the efforts of the guidance program. For example, information was obtained from the students on vocational aspirations and vocational plans. When taken in conjunction with the student's aptitude, a criterion index might be derived of the degree to which these aspirations and plans are realistic. Taking the various characteristics of the guidance program as predictor variables, one would expect that the greater the degree of attention to vocational planning, the more realistic would be the students' vocational plans. A second example may serve to illustrate the point further. The identification and development of academically talented youth is a function for which those in the guidance program are expected to be well equipped. They are expected to be well grounded in tests and their interpretation, to assist in assignment to an appropriate high school curriculum, to have a current and up-to-date working knowledge of college requirements, and to encourage an orientation toward college attendance by the most able students. For those students for whom college attendance may pose some financial difficulty, they should also have an adequate knowledge of scholarship opportunities and opportunities for obtaining loans. It would be expected that the characteristics of the guidance program as documented in our questionnaires would be correlated with the proportions of talented high school students (say the 90th percentile and above on academic aptitude) entering college. Studies of this latter type will be considered in subsequent publications.

Another important point in the study of guidance programs is to explore the ways in which guidance services and personnel have been integrated into the school programs. For this purpose, various data from the Guidance and Counselor's Questionnaires will be related to the characteristics of the school. For example, one of the limiting characteristics of the guidance program is the number of students to be served. Thus, the size of the school is one of the primary characteristics to which guidance program characteristics must be related.

This first report of results on the guidance programs and counselor personnel is concerned with descriptive characteristics of the programs and the professional qualifications of the counselors. Later chapters will be concerned with relating the characteristics of the guidance programs to those of the school, the community, and the students; and with the general problem of studying the effects of guidance and counseling on the student body.

Specifically, this chapter is divided into two sections. The first section is concerned with the guidance programs based on results obtained from the Guidance Program Questionnaire. Included is information on definitions of guidance programs; the number of guidance programs in public senior high schools in 1960; time trends and the growth of guidance in public senior high schools; projections for the coming years; estimates of counselor personnel; student-counselor ratios; resources and facilities; duties and functions performed by the guidance staff; referral resources; resources for communications; and guidance-related instruction. Section 2 of this chapter is concerned with the results obtained from the Counselor's Questionnaire including the following: degree level, graduate and undergraduate guidance courses, certification, attendance at professional meetings, professional journals read. Data were obtained, too, on the percentage of time spent in counseling and guidance, on non-guidance duties, and on various guidance functions, such as testing, individual student conferences, and conferences with parents. Data were also obtained on salaries, amount of counseling experience, amount of teaching experience, sex, and age.

Although obtained in the Guidance Program Questionnaire, this chapter will not include data on the uses of tests. This topic will appear in Chapter 8. Also excluded will be consideration of the non-public schools.

Method

Although the details of the project design and administration have been presented in Monograph 1 of this series and in previous chapters, those methodological characteristics appropriate to the study of guidance and counseling will be considered briefly.

The Sample

The results presented in these chapters are based on public senior high schools. Although both public and non-public schools were sampled, and junior high schools were included in this study in order to obtain the 9th grades from "feeder" schools, it was felt that the results on guidance and counseling were not comparable for the non-public schools or for the junior high schools and they were, therefore, excluded from this analysis. The resulting sample included 822 public senior high schools. Each of these schools completed the Guidance Program Questionnaire. In addition, there were 1,117 counselors (school personnel who spent 20% or more time in counseling) who responded to the Counselor's Questionnaire. The returns for the Guidance Program Questionnaire and for the Counselor's Questionnaire were weighted to reproduce the national population of guidance programs and the population of counselors. The statistical results reported in this chapter are based on the weighted figures.

The Questionnaires

Each school was asked to complete two questionnaires, the Guidance Program Questionnaire (GP) and the Counselor's Questionnaire (CQ) which were forwarded to the schools by mail with the test materials. Copies of both of these two questionnaires have been reproduced at the end of this report. The questionnaire items were precoded in most cases; however, many items permitted write-ins for options not covered by precoding. Responses were marked directly in the questionnaires.

The Guidance Program Questionnaire was completed by the person in charge of guidance. In some cases this was the school principal and in other cases a member of the guidance staff. It was requested that the Counselor's Questionnaire be completed by each member of the guidance staff who spent 20% or more of his time in guidance duties.

Returns

Upon receipt of the questionnaires from a school, each questionnaire was scanned for completeness. Since the items of information were not equally important, questionnaires were returned for omitted information only when in the judgment of the staff the items omitted were critical, or when response to the questionnaire as a whole was very incomplete. Specific criteria were set up for returning questionnaires for more information. The critical items were as follows: whether the school had someone officially assigned to guidance (GP-1); the number of full-time and part-time counselors (GP-33); the age of the guidance program (GP-4); recent changes in the program (GP-14); plans for expansion (GP-16); and the use of tests (GP-20). In addition, if it appeared that as many as 10% of the items had been omitted, other than the critical items, the questionnaire was returned to the school for completion.

Since it was desired to obtain as complete a response as possible, it was necessary in many cases to send follow-up letters and duplicate questionnaires to the schools that did not send in their questionnaire materials. Those not responding after several requests were telephoned. These efforts resulted in usable responses from about 100% of the participating public senior high schools and 99.7% of the non-public high schools. It should be noted, however, that several of the analyses are based on a return of about 90% of the participating schools, as approximately 10% of the returns were too late for inclusion in this study.*

It will also be noted that the weighted N for each item varies to some extent. The reason for this variation is that questionnaires were not returned for completion when only a small proportion of items were omitted.

Aside from the latter variation in sample size, it should be noted that a number of items in the Guidance Program Questionnaire were asked only of those schools reporting that they have a guidance program.

Data Analysis

The raw data were weighted to reproduce the population of schools from which the sample was drawn, within the limits of sampling errors. These weights were based primarily on the sampling ratio for schools, but were modified to allow for sampled schools which were unable to participate. These modifications resulted in variable weights. The weights do not take into account the non-respondents and as a result, the weighted frequencies are underestimates of the population. However, the percentages and correlation coefficients are believed not to be greatly biased by this procedure.

Section 1: Findings - High School Guidance Programs

Guidance Programs

The first question asked concerning the school's guidance program was, "Does your school have a guidance program in which one or more persons is officially assigned, part-or full-time, to working with individual students?" This question provides a working definition of a guidance program for this paper. It was felt that this approach would be useful for comparison to other national figures obtained by the Office of Education and for providing essentially an administrative definition of guidance. Needless to say, the question says nothing about the adequacy with which the program functions, availability of resources and facilities, or the effects which guidance may have upon the student body of the school. These limitations should be kept in mind throughout the following results.

The response for this item is shown in Table 3-1. The table shows that,

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*These analyses were conducted at the request of C. Gilbert Wrenn for inclusion in the report of the Commission on Guidance in American Schools, The Counselor in a Changing World (1962).

Table 3-1

Distribution of Schools with Guidance Programs
By Size of Senior Class

(GP-1. "Does your school have a guidance program in which one or more persons is officially assigned, part or full-time, to working with individual students?")

	Number and Percentage of Schools							
	Size of Senior Class							
Guidance Program	0-24 No.	0-24 %	25-99 No.	25-99 %	100 up No.	100 up %	Total No.	Total %
Yes	3,700	59	6,216	71	4,019	95	13,935	73
No	2,557	41	2,498	29	204	5	5,259	27
Total	6,257	100	8,714	100	4,223	100	19,194*	100

Note.--The estimated number of public senior high schools for 1958-59 was obtained from USOE report OE 2003259. The above percentages were based on about a 90% return (N = 17,348) of questionnaires. All frequencies were adjusted to the total population in proportion to the returns. A later analysis based on about a 99% return (N = 18,915) again resulted in 73% responding "yes" to this item.

in 1960, 27% of the schools reported that they did not have someone officially assigned to guidance. This figure varied according to the senior class enrollment of the school; 41% of the schools with 0-24 seniors reported that they did not have a program; 29% of the schools with 25-99 seniors; and only 5% of the schools with 100 or more seniors lacked a program. The relationship between senior class enrollment and whether the school reported having someone assigned to guidance was .26.

Trends in the Development of Guidance Programs

Trends were investigated for two reasons: first, it seemed reasonable to assume that simple assignment of someone to guidance duties would be no assurance that adequate time would be given to the development of the program, obtaining facilities, obtaining personnel, additional training, in-service experience, and so forth. Second, interest had been expressed in the growth of secondary school guidance programs and in the effects of the National Defense Education Act. For this purpose the schools were asked to indicate the number of years since the guidance program was instituted in their school. The results of this analysis, in terms of percentages, are shown in Table 3-2. Inspection of the table shows that 52% of the schools had guidance programs in 1958 or earlier, and 36% from 1955 or earlier. If one may assume that approximately two years are needed for planning, development, and obtaining facilities and resources, then the figure of 52% may be considered to be representative of the proportion of schools which in 1960 had had sufficient time to adequately develop a program of guidance that might be effective in reaching the student. This figure varied from 85% of the schools with 100 or more seniors to 29% for schools with 24 or fewer seniors. The relationship between the "Age of the Guidance Program" and "Senior Class Enrollment" was r = .42.

Table 3-2

Proportion of Schools Starting Guidance Programs in Given Years By Size of Senior Class

(GP-4. "How many years ago did your school organize a guidance program?")

	Per Cent of Schools			
	Size of Senior Class			
Year Guidance Program Started	0-24	25-99	100 up	Total
1958-1960	27	17	9	19
1955-1958	12	20	12	16
1950-1955	9	20	19	16
1950 or earlier	8	14	54	20
No program or omit	44	29	6	29
Total	100	100	100	100
N	6257	8714	4223	19,194

Note.--The estimated number of public senior high schools for 1958-59 was obtained from USOE report OE 2003259. The percentages above were based on about a 90% return (weighted N = 17,341) of the questionnaires.

What inferences may be made regarding the National Defense Education Act and the institution of guidance programs? Table 3-3 shows the rate of growth of guidance programs based on the figures from Table 3-2. For this table, each figure was divided by the number of years in the category to obtain a percentage of schools per year that instituted a guidance program. For the schools that started programs in 1950 or earlier, a 10-year figure was used, based on the assumption that relatively few schools had guidance programs prior to 1940. The resulting figures show a positively accelerating growth rate with the rate of increase most notable subsequent to enactment of NDEA in 1958. This acceleration in the curve appears to be attributable largely to the small schools (0-24 seniors) which experienced a rate of 14% per year in the years 1958-60.

Table 3-3

Schools Per Year Starting Guidance Programs in Given Years
By Size of Senior Class (GP-4)

Year Guidance Program Started	Per Cent of Schools Per Year: Size of Senior Class 0-24	25-99	100 up	Total
1958-1960	13.5	8.5	4.5	9.5
1955-1958	4.0	6.7	4.0	5.3
1950-1955	1.8	4.0	3.8	3.2
1950 or earlier	0.8	1.4	5.4	2.0

In addition to the institution of guidance programs, NDEA provided financial assistance for many services. This assistance should be reflected in increases in specific guidance facilities and services from 1958 through 1960. In response to the question, "Have counseling, guidance, or testing services in your school been increased in recent years?", 60% of the schools with guidance programs reported that services had been increased since 1958; 24% reported increased services starting about 1956; 11% reported increases starting between 1950 and 1955; and only 5% reported no changes.

The schools also responded to a checklist concerning some of the services which had been expanded from 1958 to 1960. The results obtained in terms of the per cent responding "yes" (N = 13340) are shown in Table 3-4. These results indicate areas of improvement beyond that of institution of a program.

Plans for Instituting Guidance Programs

The schools that reported that they did not have a guidance program were asked about their plans to institute a program. The results of this analysis were based on all returns, about 100% of the total sample of public senior high schools. Approximately 5,080 schools fell into this category. The results of this analysis are shown in Table 3-5. This table shows that 34% of the schools reporting no guidance program indicated that they planned to institute a guidance program soon (presumably within two

Table 3-4

Per Cent of Schools with Guidance Programs
Reporting Expansion of Service Since 1958

(GP-15. "In which of the following ways has your school's counseling program changed in the last two years?")

	Per Cent "Yes"
Personnel	
More full-time counselors	20
More part-time counselors	50
Addition of clerical personnel	25
Additional training for counselors	61
Testing	
Participation in national testing programs	88
Participation in state or regional testing programs	76
Greater use of standardized tests	84
More effective use of test results	84
Services	
Initiation of cumulative records	59
Maintenance of more detailed student records	77
Greater contact between counselor and students	72
Greater contact between counselor and parents	67

years) and an additional 29% planned to institute a program sometime after two years. Thirty-eight per cent of these schools or only 13% of all schools sampled had no plans or omitted the item. These percentages varied with size of the school, the smaller schools planning to institute guidance programs in smaller proportion than the larger schools.

This same group of schools was asked to state the reason that a guidance program had not been established. Lack of funds proved to be the major reason, 65% so reporting. Lack of administrative approval was given as a major reason by an additional 10%. These figures again varied with the school size as shown in Table 3-6.

These non-guidance program schools were also asked to indicate who the person was that was responsible for the guidance activities. The results of this analysis are shown in Table 3-7. Fifty-seven per cent of the schools indicated that the principal held this responsibility and 27% indicated that teachers held this responsibility. These results did not appear to vary systematically with the size of the school.

Projections for Guidance Programs

Based on the results of the schools planning guidance programs, projected figures were obtained for the coming years. The results of these projections

Table 3-5

Plans of Schools without Guidance Programs to Establish Guidance Program by Size of Senior Class (GP-2N)

Plans to Institute Guidance Program	Number and Per Cent of Schools							
	Size of Senior Class						Total	
	0-24		25-99		100 up			
	No.	%	No.	%	No.	%	No.	%
Yes, after 2 years	868	33	544	24	64	34	1476	29
Yes, soon	719	27	917	40	80	43	1716	34
No	820	31	642	28	43	23	1505	30
Omit	215	8	168	7	0	0	383	8
Total	2622	99	2271	99	187	100	5080	101

Note.--Proportion of the 34% of the public senior high schools that did not have guidance programs in 1960.

Table 3-6

Principal Reason that a Guidance Program Has Not Been Instituted By Size of Senior Class (GP-4N)

Reason No Program	Number and Per Cent of Schools							
	Size of Senior Class						Total	
	0-24		25-99		100 up			
	No.	%	No.	%	No.	%	No.	%
No funds	1602	61	1501	73	85	45	3188	65
Lacking administrative approval	286	11	146	7	43	23	475	10
Other	517	20	279	13	59	32	855	18
Omit	219	8	145	7	0	0	364	7
Total	2624	100	2071	100	187	100	4822	100

are shown in Figure 3-1. These projections are based on the data shown in Table 3-5, on "Plans to Establish a Guidance Program." It was assumed that those responding that they planned to install a program "soon" would do so by 1962 and that those planning to install a program "after two years" would do so by 1964. The figures were then taken as a proportion of all schools and accumulated with the figures for 1960 (Table 3-1). The projections obtained were as follows: By 1962, 82% of the schools in the country should have someone officially assigned to guidance. This figure should vary with senior class enrollment as follows: for senior class enrollment under 25, 72%; for senior class enrollment of 25 to 99, 84%; and for senior class enrollment of 100 or more, 96%. By 1964, the projected figures suggest that 89% of the high schools should have guidance programs. Again, these figures should vary with school size as follows: for senior class enrollment under 25, 80%; and for senior class enrollment of 25 to 99, 88%; and for senior class enrollment of 100 or more, 99%. Referring to Figure 3-1, which shows the cumulative percentage of schools with guidance programs it may be noted that the cumulative distribution for all scools begins to take on a typical S-shape function when the projected figures are included. It appears likely that by 1970, if one may speculate a bit, almost all schools should have someone officially assigned to guidance.

By way of qualification, it is well to bear in mind that institution of a guidance program represents a first step in the provision of adequate guidance assistance; the extent to which schools have adequate personnel and resources is necessarily of primary concern.

Table 3-7

Person Responsible for Guidance Activities
By Size of Senior Class

(GP-3N. "Who is responsible for guidance activities in your school?")

	Number and Per Cent of Schools							
	Size of Senior Class							
Person Responsible for Guidance	0-24 No.	0-24 %	25-99 No.	25-99 %	100 up No.	100 up %	Total No.	Total %
Principal	1539	58	1225	53	123	66	2887	57
Teachers	679	26	626	28	42	23	1347	27
No One	77	3	0	0	0	0	77	1
Other	52	2	273	12	21	11	346	7
Omit	276	11	148	7	0	0	424	8
Total	2623	100	2272	100	186	100	5081	100

Note.--Answered by schools with no guidance program.

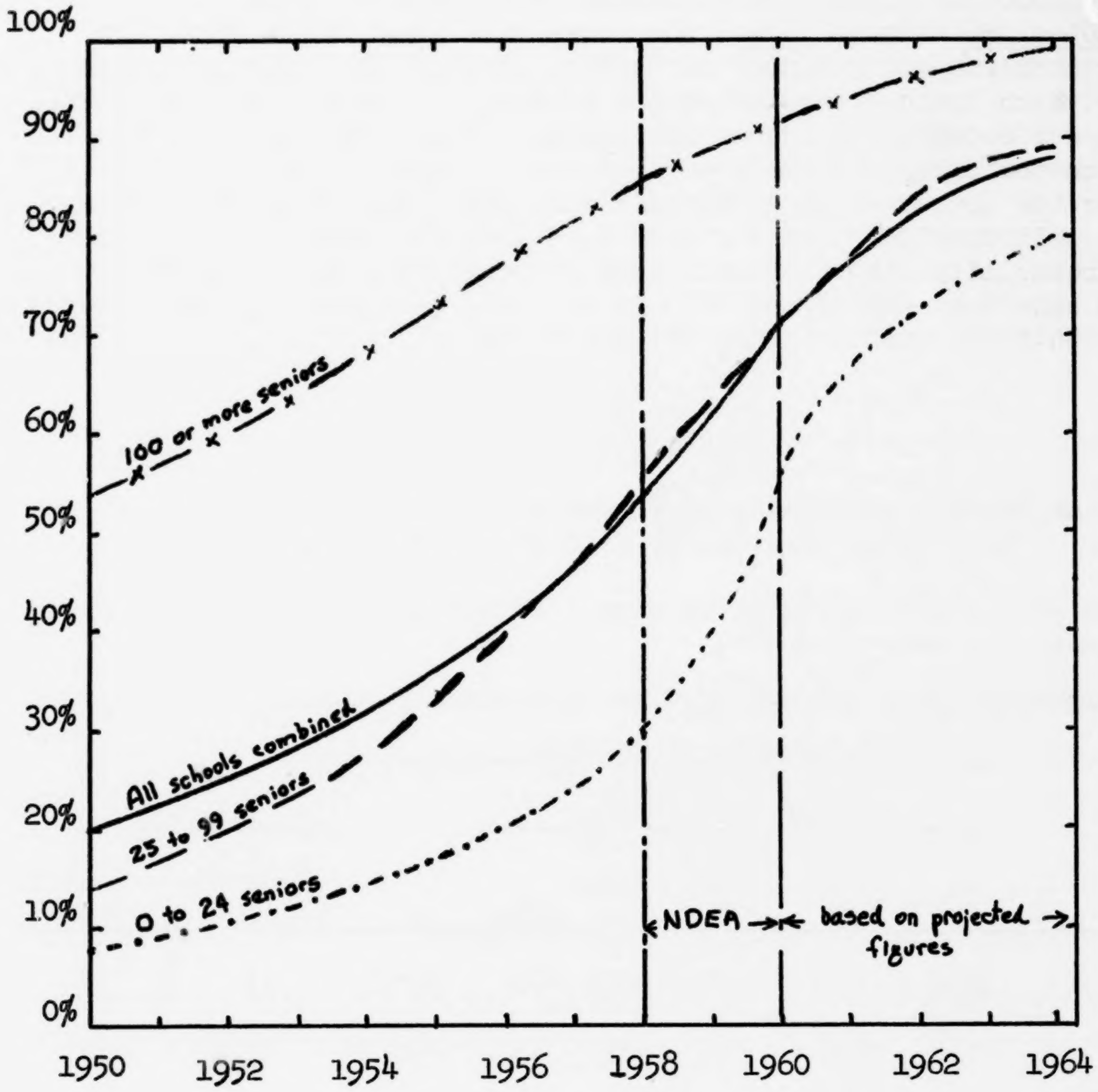

Figure 3-1. Growth of guidance programs in public senior high schools. (Projected figures are based on the school's reported plans to institute guidance programs.)

Plans for Expansion

The schools reporting that they had someone assigned to guidance were asked about plans for growth and expansion of facilities. The results are shown in Tables 3-8 through 3-11. Questions were asked about plans for expanding counseling and guidance or testing services in terms of a time estimate by which these expansions might be made. The next two items asked about plans for expanding guidance facilities, on the one hand, and testing facilities on the other. These questions were phrased in terms of the definiteness or the degree of consideration that have been given to the plans in question. It was felt that the more immediate the plans, the more definite the probability that these plans might be carried out. The results (Table 3-8) show that 43% of the schools with guidance programs were planning to expand within one year and that an additional 21% were planning to expand

Table 3-8

Number of Schools with Plans for Expansion of Counseling Guidance, or Testing Services by Size of Senior Class

(GP-16. "Is your school planning to expand counseling, guidance, or testing services within the near future?")

	Number of Schools						Per Cent	
	Size of Senior Class							
Plans for Expansion	0-24	25-99	100-399	400 up	Mixed	N	Schools with G.P.	All Schools
Within 1 yr.	1299	2644	1482	228	60	5713	43	31
Not before 2 yrs.	573	1436	669	109	17	2804	21	15
Not before 3-4 yrs.	162	336	240	0	5	743	6	4
Not before 5 yrs.	265	153	66	0	8	492	4	3
No	1376	1213	600	141	65	3395	26	19
Total-Schools with Programs	3675	5782	3057	478	155	13,147	100	
Omit (No G.P.)	2522	2430	225	13	3	5193		28
Total all Schools	6197	8212	3282	491	158	18,340		100

services in a year or two. The next tables show that, of the schools reporting that they planned to expand facilities, 39% reported that they were in the process of expanding guidance facilities and 46% reported that they were in the process of expanding testing facilities. The plans of a substantial proportion of the schools appear to be rather indefinite. Combining the percentages for those who reported that they have discussed the matter but had no plans, and those who said that they had nothing definite worked up, the results show that 32% of those planning to expand guidance facilities and 30% of those planning to expand testing facilities had not yet made very definite progress. The larger schools appear to have more definite plans than the smaller schools.

Table 3-9

Plans to Expand Guidance Facilities
By Size of Senior Class

(GP-17. "To what extent has your school developed plans for expanding guidance facilities?")

	Number of Schools							
	Size of Senior Class						Per Cent	
Plans to Expand Guidance Facilities	0-24	25-99	100-399	400 up	Mixed	N	Schools with G.P.	All Schools
In Process or soon	970	1818	1012	133	55	3988	39	22
Plan being considered	257	1173	489	81	11	2011	20	11
Plan being Formulated	107	462	255	50	3	877	9	5
Discussed, no Plan	701	699	382	85	17	1884	19	10
Indefinite	425	458	462	0	11	1356	13	7
Total-Schools Planning Expansion	2460	4610	2600	349	97	10,116	100	
No Plans for Expansion	3737	3602	682	142	61	8224		45
Total-All Schools	6197	8212	3282	491	158	18,340		100

Table 3-10

Plans to Expand Testing Facilities By Size of Senior Class

(GP-18. "To what extent has your school developed plans for expanding testing facilities?")

Plans to Expand Testing Facilities	Number of Schools: Size of Senior Class 0-24	25-99	100-399	400 up	Mixed	N	Per Cent: Schools with G.P.	All Schools
In Process, or soon	1037	2346	1026	102	55	4566	46	25
Plan being considered	415	800	278	60	9	1562	16	9
Plan being Formulated	107	370	269	71	5	822	8	4
Discussed, no Plan	420	444	505	78	15	1462	15	8
Indefinite	432	588	418	26	12	1476	15	8
Total-Schools Planning Expansion	2411	4548	2496	337	96	9888	100	
Omit	3786	3664	786	154	62	8452		46
Total-all Schools	6197	8212	3282	491	158	18,340		100

The schools were also asked to check a number of items showing various things that might be added to the guidance program. The results are shown in Table 3-11 as the percentage responding "yes" to each option. In general, 60% of schools plan to increase services and only one-third plan increases in personnel and staff.

These trends suggest that, with the assistance of NDEA, great strides have been made and are likely to be continued in the development of guidance programs in our public high schools. However, these gains should not suggest complacency. It would probably be well to check on realization of plans for growth through another study.

Table 3-11

Per Cent of Schools with Guidance Programs Planning Expansion of Specific Personnel and Services

(GP-19. "Are any of the following included in your plans for expansion?")

Personnel:	Per Cent "Yes"
Additional full-time counselors	27
Additional part-time counselors	30
Additional clerical staff	33
Services:	
Increased use of standardized tests	58
More extensive follow-up after graduation or withdrawal	60
More contact with parents	60
More detailed records of student's performance	54
More time available for counseling	57

Estimates of Counselor Personnel

Estimates of the number of counselor personnel were obtained from the Guidance Program Questionnaire and the Counselor's Questionnaire. In the planning of the study there was some difficulty in arriving at a definition of a counselor. It had been the observation of Project Talent consultants that reports of counselor personnel varied with the source of the estimate. It was believed that reports from administrative personnel might yield estimates different from those obtained directly from the counselors. It was decided to obtain information in two different ways. On the Guidance Program Questionnaire, completed by the head of the Guidance Program or by the principal, the respondent was asked to give the number of full-time counselors and the number of part-time counselors in the school. The definition of a full-time counselor and a part-time counselor was left up to the respondent. The Counselor's Questionnaire called for response from any person on the staff spending 20% or more of his time in counseling or guidance duties. Tables 3-12 through 3-15 show the results of these analyses.

The first three tables are based on estimates obtained from the Guidance Program Questionnaire. These tables are based on about a 90% return from the schools and are uncorrected in order to show the obtained response distributions. Therefore, they constitute underestimates of the population. These data were uncorrected since it was felt that the last 10% responding may not be representative in terms of the number of full-time or part-time counselors of the first 90%. The data are probably not severely distorted by this omission. In a subsequent analysis based on about 99% of the returns, means and standard deviations were obtained for the schools having guidance programs. The mean number of full-time counselors reported was .55 with a standard deviation of 1.04, and the mean number of part-time counselors was 1.98 with a standard deviation of 2.22, based on weighted N's of over 13,000 cases each. Table 3-14 shows estimates of the number of full-time and part-time counselors for each school-size category. These data were obtained by multiplying the number of schools by the number of counselors reported in the respective items of the Guidance Program Questionnaire. They were calculated from the original data in which the item responses included "nine or more" as an upper limit instead of "five or more" as shown in the two previous tables. The estimate of 29,754 is based on 90% return and is lower than would be obtained for complete returns.

It should be remembered that this definition of guidance is largely one of administrative assignment. The figure of 29,754 is within reasonable agreement with figures obtained by the Office of Education which counted all persons assigned to guidance as a counselor irrespective of the proportion of time spent, whether they are teacher-counselors, or serve some other multiple function. It is felt that these figures are sufficiently consistent with those obtained by others to be considered reliable. However, in terms of professional qualifications and identification with the profession, this definition seems inadequate.

The estimates of the number of counselors obtained from the Counselor's Questionnaire shows an interesting and informative comparison. Table 3-15 shows the number of counselors in terms of the number responding for each school-size category and the percentage of time spent in counseling and guidance. These results show 18,348 counselors spending 20% or more of their time in counseling and guidance; and 10,137 serving 50% or more of their time in this function. (The qualifications, education, training, certification, and professional participation of these counselors will be considered in Section 2 of this chapter.) Suffice it to say, the number of counselors that may be considered to be professionally qualified or who devote a minimal amount of time (20% or one day a week) to counseling and guidance is substantially lower than those devoting some time to guidance functions.

Comparison of Results

It is interesting to compare the results obtained from the Counselor's Questionnaire with those obtained from the Guidance Program Questionnaire. Table 3-16 shows the cumulative percentage of time in counseling for schools

Table 3-12

Number of Full-Time Counselors
By Size of Senior Class

(GP-2Y. "How many persons in your school are assigned full time to guidance?")

Number of Full-Time Counselors	Number of Schools					
	Size of Senior Class					
	0-24	25-99	100-399	400 up	Mixed	Total
Five or more	0	0	43	115	3	161
Four	0	0	142	38	7	187
Three	0	0	125	65	24	214
Two	0	62	606	44	13	725
One	306	1212	1296	118	29	2,961
None	2875	4138	824	97	41	7,975
Omit*	2467	2468	208	0	2	5,145
Total	5648	7880	3244	477	119	17,368

Number of Full-Time Counselors	Per Cent of Schools					
	Size of Senior Class					
	0-24	25-99	100-399	400 up	Mixed	Total
Five or more	0	0	1	24	2	1
Four	0	0	4	8	6	1
Three	0	0	4	14	20	1
Two	0	1	19	9	11	4
One	6	15	41	25	24	17
None	50	53	25	20	35	46
Omit*	44	31	6	0	2	30
Total	100	100	100	100	100	100

Note.--School weights B were used to reproduce the population of schoools.

*Omits include those schools reporting that they do not have a guidance program (Spring 1960).

Table 3-13

Number of Part-Time Counselors By Size of Senior Class

(GP-3Y. "How many persons in your school devote part-time to guidance?")

	Number of Schools					
	Size of Senior Class					
Number of Part-Time Counselors	0-24	25-99	100-399	400 up	Mixed	Total
Five or more	221	378	429	225	75	1,328
Four	0	126	199	50	3	378
Three	159	422	292	45	0	918
Two	745	1022	516	13	0	2,296
One	2006	2790	610	0	23	5,429
None	204	772	875	143	10	2,004
Omit*	2310	2365	294	3	6	4,978
Total	5645	7875	3215	479	117	17,331

	Per Cent of Schools					
	Size of Senior Class					
Number of Part-Time Counselors	0-24	25-99	100-399	400 up	Mixed	Total
Five or more	4	5	13	46	63	8
Four	0	1	6	10	3	2
Three	3	5	9	10	0	5
Two	13	13	16	3	0	13
One	35	36	19	0	20	31
None	4	10	28	30	9	12
Omit*	41	30	9	1	5	29
Total	100	100	100	100	100	100

Note.--School weights B were used to reproduce the population of schools.
*Omits include those schools reporting that they do not have a guidance program.

Table 3-14
Estimates of Number of Full-Time and Part-Time Counselors By Size of Senior Class

	Size of Senior Class					
	0-24	25-99	100-399	400 up	Mixed	Total
Number of Full-Time Counselors	306	1,336	3,666	1,321	174	6,803
Number of Part-Time Counselors	5,356	9,310	5,460	2,134	691	22,951
Total--Full-Time and Part-Time Counselors	5,662	10,646	9,126	3,455	865	29,754

Note.--The above estimates were obtained by multiplying the number of schools by the number of counselors reported in Items 2 and 3 of the Guidance Program Questionnaire.

Table 3-15
Cumulative Per Cent of Time in Counseling and Guidance By Size of Senior Class

(CQ-6d. "Duties currently performed. Mark the per cent of time you spend in counseling and guidance.") *

	Number of Counselors			
	Senior Class Enrollment			
Per Cent Time in Counseling and Guidance	0-24	25-99	100 up	Total
95-100%	206	624	2815	3,645
70-100%	308	1689	3499	6,496
50-100%	360	2763	6914	10,137
20-100%	2594	5834	9920	18,348
20- 50%	2234	3071	3006	8,074

* For exact wording of this see Appendix.

Table 3-16

Estimates of Number of Counselors with Various Qualifications by Size of Senior Class

	Size of Senior Class		
	0-99	100 up	Total
From Principal's Report			
Full-Time	1,642	5,161	6,803
Part-Time	14,666	8,285	22,951
Total	16,308	13,446	29,754
From Counselor's Report			
50-100%	3,123	6,194	10,137
20-50%	5,305	3,006	8,074
Full-Time Equivalents	3,794	6,260	10,055
Counselors with one or more graduate courses:			
In counseling	6,002	8,907	14,909
In practicum	1,832	3,812	5,644
Number of Schools with Guidance Programs (90% estimate)	9,916	4,019	13,935
Estimated Number of Seniors	559,346	1,167,448	1,726,794*
Estimated Total Students in Grades 9-12, or 10-12 schools	2,796,730	5,684,371	8,481,101* (Excludes Postgrad)
Estimated Total in Grades 9-10-12 Schools with Guidance Program	1,923,755	5,503,750	7,427,505
Proportion of Students served by Guidance Program	68.8%	96.8%	87.6%

*USOE figure

in the different size categories. The point that should be noticed is the number of full-time counselors reported in Table 3-15, and the results shown here. The figures from the counselors' data with the greatest correspondence to those of the Guidance Program data are in the category of 70-100 per cent time in counseling and guidance. This figure showed 6,496 counselors as compared to 6,803 from Table 3-14. Although differing by several hundred cases, these figures are sufficiently comparable when it is considered that definitions of full-time counselors have been taken to mean 50% or more, or 90% or more. Limiting the definition of the counselor to those persons spending 20% or more of their time in counseling and guidance duties produced the figure of 18,348 cases, some 11,000 cases less than the total number of part-time and full-time counselors reported in the Guidance Program Questionnaire by the school principal. Evidently the teacher-counselor personnel were included in abundance in the Guidance Program Questionnaire.

It appears that various definitions of guidance and counseling personnel may be devised to serve various purposes. Two of these definitions have been presented here, the first being essentially an administrative assignment to guidance duties and the second a definition more suitable to the profession -- namely, those who spend at least 20% of their time in counseling and guidance. It would seem advisable for future research studies to take into account these varying definitions of counselor personnel in view of the different purposes for which estimates may be made. It seems unlikely that school administrators would give up their definition of guidance personnel as someone assigned to carry out the guidance function in the school setting. On the other hand, this definition is hardly adequate for studies concerned with the development of the profession. The emerging pupil personnel concept also appears to acknowledge this distinction between qualifications of the individual and the total pattern of qualifications of all of those in the schools. Often recommendations are made that a school should have one or more well-trained counselors, according to the size of its student body and other local needs, but that these personnel may be supplemented with teachers assisting with a variety of duties in the guidance program. Future research might emphasize the organizational and leadership roles played by trained counselors in gaining the cooperation and participation of other school staff members.

Student-Counselor Ratios and Counselor-School Ratios

A great deal of credence appears to be given by school administrators and professional guidance people to the student-counselor ratio as an index of the operational adequacy of the Guidance Program. The Office of Education recommended the ratio of 300 students to one full-time counselor, with the qualification that other supporting professionals such as social-workers, physicians, and psychiatrists be readily available. More recently Conant (1959) recommended a ratio of 250 students to one full-time counselor.

In a recent review of student-counselor ratios Findley (1960) commented upon the variation in methods for estimating student-counselor ratios. It was noted that the ratios could appear to be quite acceptable or unacceptable depending on the method of computation. For this reason, and to provide descriptive data for the national population, student-counselor ratios and counselor-school ratios were calculated using estimates of the number of counselors obtained from the Guidance Program Questionnaire and independently obtained estimates from the Counselor's Questionnaire. The basic data are shown in Table 3-16. In addition to data shown previously, in Tables 3-14 and 3-15, information is presented on the following: the number of full-time equivalent counselors estimated from the Counselor's questionnaire responses; the number of counselors who had one or more graduate courses in counseling; and the number of counselors who have had one or more graduate course in practicum. The figures show an estimate of 10,055 full-time equivalent counselors, 14,909 counselors with one or more graduate courses in counseling, and 5,644 counselors with a graduate course in practicum. These figures varied in each case by the senior class size of the school.

Estimating Students Served by Guidance Programs

Shown at the bottom of Table 3-16 are estimates of the number of students which were obtained by using USOE and Project Talent data. At this point in the analysis, population estimates had not been obtained from the Project Talent data on the number of students in the population. Therefore, it was decided to use U.S. Office of Education figures (1959-60). The figures for total number of students in the country for the senior class only and for all students are indicated in the table. What was desired was an estimated total number of students in grades 9-12 or 10-12 in schools which have guidance programs. Unweighted figures were available from the Project Talent data on average class size. These figures were used to obtain estimates of the number of seniors in each school size category (0-99 and 100 and up). The ratio of seniors to total enrollment for grades 9-12 was assumed to hold for the schools in each size category group. Thus the number of seniors in each size category was multiplied by 5 in order to obtain tne estimate of number of students in grades in 9-12 or 10-12 within the size category. The final step to obtain the percentage of students served by guidance programs was to multiply the average enrollment by the proportion of schools having guidance programs. This served to provide a multiplier to obtain the proportion of students served by guidance programs, resulting in an estimated number of students served by guidance programs. According to these estimates, as shown in Table 3-16, 87.6% of the students in public senior high schools had access to guidance programs in 1960. This figure varied according to senior class enrollment; for schools with under 100 seniors 68.8% of the students had access to a guidance program while for those with 100 or more seniors 96.8% of the students had access to a guidance program.

Student-Counselor Ratios

The estimated number of students served by guidance programs was used to calculate the student-counselor ratios shown in Table 3-17. Some interesting points emerge from this table. First, an inspection of the figures in the total column shows that none of the ratios approached the recommended figure of one counselor to 300 students. The ratio for full-time counselors

Table 3-17

Student-Counselor Ratios
by Size of Senior Class

	Number of Students per Counselor		
	Size of Senior Class		
	0-99	100 up	Total
GP			
Full-Time	1172	1066	1092
Part-Time	131	686	324
Full-Time plus Part Time	118	409	250
CQ			
50-100%	616	888	732
20-50%	362	1830	920
Full-Time Equivalents	507	879	738
1 or more Graduate Course in Counseling	320	618	498
Grad Course in Practicum	1050	1444	1316
Counselor-School Ratio for Schools with Guidance Program			
GP			
Full-Time	0.17	1.28	0.49
Part-Time	1.47	2.06	1.65
Total	1.64	3.35	2.14
CQ			
50-100%	0.31	1.54	0.73
20-50%	0.53	0.75	0.58
Full-Time Equivalents	0.38	1.56	0.72
Grad Course Counseling	0.60	2.22	1.07
Practicum	0.18	0.95	0.41

as reported from the Guidance Program Questionnaire was 1,092 students to one counselor. Calculations from full-time equivalents obtained from the Counselor's Questionnaire was an improvement: 739 students to one full-time-equivalent counselor but still far from currently recommended figures. The estimates of the number of counselors who have had one or more courses in practicum was included in order to obtain a better index of the qualifications of the counselor. Table 3-17 shows that the ratio of 1,316 students to one counselor with a graduate course in practicum is less favorable than any of the other ratios.

There is an interesting point to note in making comparisons between the schools with fewer than 100 seniors and with 100 or more seniors. With but one exception (the student-counselor ratio for full-time counselors obtained from the Guidance Program Questionnaire) the smaller schools have more favorable ratios than do the larger schools. Apparently there are more counselors in the larger schools, but a disproportionately greater number of students in the larger schools places the student-counselor ratio at a less advantageous level than for the smaller schools. Through this information, and the information on the proportion of large and small schools having guidance programs, the dynamics begin to emerge. It would seem that the smaller schools are slower to institute a program of guidance due perhaps to the unavailability of funds or a variety of other reasons; but once having instituted the program, their enrollment being small puts them at an immediate advantage with respect to the student-counselor ratio. Apparently, judging from the ratio of students to full-time equivalent counselors, the assignment of time to counseling may first be quite small, that is in the 20 to 50% category. The dynamics for the larger schools appear to be somewhat different. Being large, the cost of the counselor's salary may be distributed over a large number of students, and the assistance needed in testing, helping to plan students' programs, and the performance of other functions are greater. Thus the first step is to institute a program and to assign some one person to that program without particular regard for the number of students with which the counselor must work. This explanation of the dynamics involved in achieving acceptable levels of the student-counselor ratio is consistent with the results obtained in Table 3-17.

Table 3-18 also shows the ratio of counselors to schools with guidance programs. These figures show the larger schools to have more favorable ratios than the smaller schools. This fact may be accounted for by the relatively small number of schools with large enrollments. The total column shows the ratios for all schools. It may be noted that there are only .72 full-time counselors per school and that the ratio of counselors with a course in practicum is only .41. There may be an implication in these results that counselors in the larger schools are better trained, and are better equipped to perform professional functions, but may be less able to do so because of the less favorable student-counselor ratios.

Table 3-18

Adequacy of Guidance Resources and Facilities

(GP-5. "How adequate are the facilities for guidance which are available to you?")

	Per Cent of Schools with Guidance Programs					
Facility	Fully Meets Needs	Adequate	Minimal Inadequate	Unavailable	Omit	Total*
Private Room	27	32	21	18	2	100
Testing Space	22	37	32	7	2	100
Test File	31	40	22	5	2	100
Space for Guidance	19	37	31	10	3	100
Guidance Budget	15	40	29	13	3	100
Confidential File	40	36	18	6	0	100
Clerical Assistance	9	19	32	36	4	100

*Estimated N = 12,663 (from 90% return)

Note.--The extent of response bias on these items is unknown and in this regard the results might be considered to be upper bound estimates in terms of the proportion of schools which in fact have fully adequate facilities. On the other hand, the respondents might have been motivated by a perceived need for better facilities, although an indifferent observer might have viewed the facilities as favorable comparable to those available elsewhere. Thus it may be that the biases are counterbalanced as a result of the various interpretations of the rating categories. A further consideration in the evaluation of these results is in the category of "unavailable". This category is unambiguous and could be easily observed by others with consistent results.

Questions Remain to be Answered by Further Research

These data appear to raise more questions than they answer. Student-counselor ratios have been propounded more on the basis of expertise than through empirical evidence. Vastly differing definitions provide differing results, all purporting to measure the same concept. However, the ultimate questions have not yet been addressed--"What combinations of counselor qualifications, training, and experience does a school need in order to be functionally effective?" "How many students can a well-qualified and trained counselor be expected to deal with and continue to be functionally effective?" It is planned in later analyses to reorganize the data to answer these questions empirically. For this purpose student-counselor ratios will be obtained for each school. The counselor estimates will also be approached somewhat differently. For each school the following will be obtained:

the number of counselors;
the number of full-time counselor equivalents;
the total amount of experience of the counselors in that school;
and the number of counselors with one or more courses in practicum.

These and other data from the Counselor's Questionnaire would be converted to ratios and studied in conjunction with student responses on the follow-up questionnaires, then related back to the corresponding schools. For example, in a preliminary analysis of a subsample of senior boys about 50% stated that they had never discussed colleges or occupations with the school counselor; and this in spite of the fact that the present data indicate that 88% of the students in the country are in schools that have a guidance program. Clearly, this discrepancy may be attributable to facts already shown--that many of the schools with guidance programs started them only within one or two years before 1960--that the ratios of students to counselors are extremely unfavorable for individual counseling sessions--and other points.

As a further step for investigating the effects of counseling, the students' responses (for those who are in schools with guidance programs which have been functioning for a number of years) would be organized with respect to counseling criteria. For example, data were obtained on the Student Information Blank concerning plans for college, occupational plans and aspirations, and a number of other variables. These data would be used as criterion variables and the student-counselor ratios as predictors. Through predictor-criterion analysis using the above variables, it should be possible to determine empirically the relationship between the patterns of qualifications and experience of the counselors and effectiveness with students.

Resources and Facilities in Schools with Guidance Programs

The schools were asked to rate the adequacy of the resources and facilities for guidance listed in Table 3-18. Of particular interest are the 13% reporting that a guidance budget was unavailable and the additional 29% reporting that the guidance budget was minimal or inadequate.

It seems reasonable to expect that guidance services may operate more effectively if a budget separate from other school expenditures is at the disposal of the guidance department. Clerical assistance, a greatly needed source of relief from administrative detail for the guidance worker, appears to be sorely lacking as 36% of the schools reporting that clerical assistance is unavailable, and an additional 32% reporting that clerical assistance is minimal or inadequate. A need for other resources is evident, including a private room for counseling, testing space, a file of tests, a confidential file for case records, and space for guidance.

Duties Performed by Counselors

The schools were asked to respond to a list of items in terms of whether their counselors performed this duty regularly, that is, as a major responsibility; whether the counselor performed it occasionally but not regularly, or whether the counselor never performed it.* These scales are shown in Table 3-19 along with percentage responses for each of the items. The purpose of these questions was to determine some of the ways in which the guidance program might be attempting to serve students' needs.

Table 3-19 shows the percentage of schools responding to each of the items. It may be seen that the duties most frequently mentioned as being performed "regularly" as a major responsibility are:

counseling individual students on college entrance requirements, choice of colleges, etc., - 84%
helping individual students plan their high school programs,- - - - 80%
and administering the testing program.- - - - - - - - - - - - - - - - 79%

Perhaps the surprising aspect of these figures is that they were not higher. Another part of the analysis showed that 96% of the schools use nationally

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*It is possible to interpret the responses to these items in one of two ways; first that the need may not be recognized and, second, that though recognized, the need may not be served. This limitation must be kept in mind in interpreting the results.

The response choices were designed to determine (a) whether or not a specific function is performed in the school and (b) the general extent and/or importance of this function in the counselor's role. "Regularly" was intended to mean that one or more of the counselors was assigned the responsibility for this duty and/or that the need arises for performance of this duty with sufficient regularity to warrant major attention. "Occasionally" was intended to mean a degree of importance and frequency somewhat less than regularly.

In the development of the questionnaire, consideration was given to the advisability of obtaining responses to these items from the individual counselors rather than for the guidance program as a whole. However, it was decided that the information would be more useful for the purposes of the Project if it were obtained to represent the functioning of the total guidance program instead.

Table 3-19

Duties Performed by Counselors (GP-12*)

Duties	Per Cent of Schools with Guidance Programs			
	Regularly	Occasionally	Never	Omit
General Aims				
Helping students make the most of their potentialities	68	30	0	2
Assisting students in making valid self-appraisal	51	43	2	4
Non-Guidance Duties				
Teaching	55	17	25	3
Non-counseling administrative duties	37	39	22	2
Clerical work	39	49	10	2
Non-Counseling Duties				
Administering testing program	79	18	3	0
Research	18	59	21	2
Counseling Follow-up				
Follow-up work with individuals to determine the results of counseling	28	54	16	2
Education--In School				
Conducting group orientation sessions for new students	45	31	23	1
Helping individual students plan their high school programs	80	18	1	1
Counseling with individual students on subject-matter difficulties	58	40	0	2
Counseling with individual students achieving below the acceptable scholastic level	63	35	0	2

*For exact wording of item see Appendix.

Table 3-19 (Continued)

Duties Performed by Counselors

Duties	Per Cent of Schools with Guidance Programs			
	Regularly	Occasionally	Never	Omit
Pre-College				
Counseling individual students on college entrance requirements, choice of college, etc.	84	15	0	1
Conducting group discussions on colleges and other training after high school	38	48	12	2
Counseling with individual students regarding plans for financing college education	52	45	2	1
Drop-outs				
Counseling with students over minimum age who wish to drop out of school	45	48	5	2
Counseling with students under minimum age who wish to drop out of school	47	43	9	1
Vocations				
Counseling individual students on jobs and occupations	54	41	3	2
Conducting group discussions on jobs and occupations	29	48	20	3
Placement				
Helping students find part-time jobs	13	67	19	1
Helping graduates find jobs	11	58	29	2
Military				
Conducting group discussions on military obligations	23	47	28	2

Table 3-19 (Continued)

Duties Performed by Counselors

Duties	Per Cent of Schools with Guidance Programs			
	Regularly	Occasionally	Never	Omit
Emotional Problems				
Identifying seriously disturbed students having severe emotional problems, and referring them elsewhere for help	41	49	8	2
Counseling with disturbed students having emotional problems	34	58	6	2
Adjustment				
Conducting group discussions on adjustment of personality	16	49	33	2
Counseling with students not getting along with classmates	35	61	3	1
Counseling with students having problems with teachers	55	41	2	2
Counseling with individual students on personnel or family problems	29	66	4	1

Note 1.--Estimated N from a 96% return -- 13,388
Note 2.--Estimated number of schools with Guidance Programs--13,935

standardized tests. One might wonder who besides someone on the guidance staff might regularly assume major responsibility for administering the testing program. It may be that for the 18% of the schools responding "occasionally" to this item standardized tests are administered very infrequently. The 15% of the schools who reported that counseling individuals on colleges is performed occasionally may be those in which only a very small proportion of the students go on to college. This hypothesis may be tested in later analyses by data available from the School Characteristics Questionnaire.

Two statements of general aims or what might be termed "values of guidance" were included. These were: "Helping students make the most of their potentialities", and, "Assisting students in making valid self-appraisal". As with the previous items it seems more surprising that the percentage responding "regularly" was not higher than that actually obtained. It may be argued that the generality of these items limits their usefulness. However, they do describe major guidance objectives. It may be that those responding "occasionally" to these items perceive their duty in more concrete testing programs, or providing information on colleges. It is also possible that they perceive these points as desirable goals for which time and resources are inadequate.

Non-Guidance Duties

Responses under the category of "non-guidance duties" appear in Table 3-19 to be consistent with other responses obtained in the Guidance Program Questionnaire and in the Counselor's Questionnaire. The 10% reporting that clerical work is never performed by their guidance personnel is consistent with the 9% reporting that clerical assistance "fully meets present needs"; and the 39% who report that guidance personnel regularly perform clerical work is consistent with the 36% who report that clerical assistance is unavailable in the school.

Research and Follow-up

Although the questionnaire did not specify the type of research activity (library or empirical research; action, descriptive, or experimental research), the data do suggest some broad limits on the scope of research activity. Twenty-one per cent, it may be noted, never engage in research activities and only 18% do so regularly. If it may be assumed that the term "regularly" was interpreted as a "major responsibility" of professional guidance workers, then the figure is disturbingly low. If, on the other hand, the item was interpreted in terms of the relative amount of time devoted to research, then the figure may be quite appropriate. The question of what constitutes an adequate amount of attention to research and the types of research that might be conducted by a guidance program are issues in need of further investigation and beyond the scope of this study.

The next group on Table 3-19 covers counseling follow-up, and shows a pattern of results similar to that for research; 16% of the schools reporting that they never perform this function. It may be that excessive counselor loads limit the extent to which this necessary function can be performed. However, in view of the fact that only 28% reported that this was a regularly performed duty, it would appear that this is an area much in need of improvement.

Educational Processes

The next group of questions are concerned with educational processes and show relatively high frequencies of performance in the "regularly" and "occasionally" categories. These findings are consistent with the general observation that counselors are expected to focus upon immediate education problems, perhaps to the neglect of serving other student needs. The fact that 23% of the schools reported that they never conduct group orientation sessions for new students may be explained in several ways. First, a large number of the schools include grades kindergarten through twelve or one through twelve and have relatively small classes. Therefore, it may be impractical for group sessions to be used. Secondly, as the reader will note in a number of other items presented in this table, group methods do not appear to be used by a substantial proportion of the school programs.

It was not possible, nor was it the purpose in this study, to determine whether group procedures might be appropriate for use in different school settings. However, it may be possible to study this question by relating school size and counselor-student ratio to these items. Presumably, group methods would be expected to be found in use more frequently in the larger schools and in schools in which the counselor-student ratio is least advantageous.

Pre-College Counseling

Pre-college counseling receives regular attention by a large proportion as might have been expected. Further indication is obtained of the tendency of some schools not to use group methods; however, there are fewer schools who never conduct group discussions on colleges than schools who never use these procedures for orientation of new students.

The Drop-out

The drop-out problem seems to be receiving attention from all but a small proportion of the schools. However, when comparing the proportions with those listed under "education in school", it can be noted that they are slightly lower. These items would be more easily interpretable if they were related to school drop-out rate, thus obtaining an index of the need for attention to drop-outs.

Vocational Counseling

Vocational counseling appears to gain less attention than does pre-college counseling. The proportion of schools performing each function regularly shows that for individual or for group approaches the proportion is lower for vocational counseling. Considering the fact that only about 55% of high school graduates do not go on to college, it would seem that greater attention is needed in the vocational counseling area. Perhaps neglected even more is the area of vocational placement. Relatively large proportions report "never" providing assistance in helping students find jobs. Although it might be argued that other agencies are prepared to provide this assistance, the items were stated sufficiently broadly to permit referrals to appropriate agencies to be classified as occasional help. Furthermore, the fact that only 13% and 11% responded that they do this regularly supports the view that many schools could improve their placement assistance, whether this be through direct contact with employers or through referral to state employment agencies and other existing services.

Emotional Problems

In the area of emotional problems Table 3-19 shows that 41% regularly identify and refer severe emotional problems for help, and 34% reported that they regularly counseled the disturbed student having emotional problems. It is difficult to evaluate the meaning of these responses until other information is available. For example, consider the 8% of the schools who reported that they never identify and refer seriously disturbed students.

Does this mean that local mental health resources are so adequate that the guidance personnel never become involved with students with emotional problems? Or does it mean that referral resources are so inaccessible that the problem is left entirely alone, thinking it best not to uncover problems that cannot be adequately dealt with? Or, finally, could it mean that modest referral resources are available, but that the guidance and teaching staff are inadequately equipped in their understanding of emotional problems to carefully identify the seriously disturbed student? A similar set of inferences could be made with respect to the 34% of the schools who reported that they regularly counseled disturbed students. Is this owing to the lack of adequate mental health resources in the community? Or that these schools have persons trained in therapy? Or that the guidance staff does not appreciate the limitations of its training for working with emotionally disturbed students? Fortunately, it will be possible in later reports to draw inferences regarding the community mental health resources available to the schools and the training and education of the counselors for dealing with emotional problems. These points will be considered later in this report.

Adjustment Counseling

Adjustment counseling or counseling on personal problems appear to be conducted much less frequently than many might have expected. Conducting group discussions on adjustment of personality, as compared with all other items that involve the use of group techniques, shows the highest percentage reporting that this is never done and the lowest percentage reporting that this is done regularly. It is notable, too, that the adjustment problem given attention regularly by the greatest percentage of the schools is school-related; that is, 55% reported that counseling students having problems with teachers is a regular responsibility. These items suggest the extent to which immediate interpersonal problems are dealt with; however, little information is available on the ways in which long range planning for personal needs might be dealt with.

Referral Resources

The schools were asked to report on the availability of various resources for referral including psychiatrists, psychologists, social workers, a child guidance clinic, a speech clinic, and a reading clinic. For each of these resources responses were obtained as to whether the resource was

(a) available in our school,
(b) available in the school system,
(c) available in the community, or
(d) available only after a long waiting period.

Response could be made to all or none of the options as applicable; however, for the purpose of the present analysis the data were arranged according to a continuum of accessibility. Thus if the response was made that the resource was available in the school, none of the other options was counted; if available only after a long waiting period, availability in the community or school system was not counted: if available in the school system, then availability in the community was not counted; and finally, availability in the community was counted only when the other three were not checked. This organization of the data achieved independence of the options; however, in point of fact, there was very little overlap of the responses. The figures presented in Table 3-20 are based on 96% return and are limited to those schools with someone assigned to guidance, resulting in a weighted N of 13,388 schools. If the remaining schools have guidance programs in the same ratio as the ones heard from, then there are an estimated 13,935 schools with guidance programs.

An analysis of the percentage of schools for which none of the resources were available, showed that 1,818 schools, or 14% of the schools with guidance programs, had no access to referral resources. This figure is included within the estimates in the unavailable row shown in Table 3-20. Referring to the top row, the per cent of schools indicating that the resource listed was unavailable or who omitted the item. The lowest percentages in the "unavailable" row are for social workers and psychologists, 24% and 29% respectively. The highest percentage, 41%, was for reading clinics. The next row shows the percentage of schools responding that a given resource was available only after a long waiting period. Clearly, the value of a referral resource may be severely handicapped by the lack of ready availability of these services. The next row shows a subtotal for those responding "unavailable" plus those responding or "available only after a long waiting period". This row might appropriately be labeled "difficult access" resources. Percentages for social workers, psychologists, and speech clinics were the lowest. But even then the figures show that social workers are the only referral resource available to those schools with a guidance program more than 50% of the time.

The remaining rows show resources that were available and presumed to be be readily accessible. Looking at the subtotals for these three rows, it may be seen that least frequently available are the child guidance clinic, psychiatrist, and reading clinics. Social workers, psychologists, and speech clinics are more readily accessible, in that order. Only one school in eleven has a speech clinic or a reading clinic available.

Comparing these results with the results in Table 3-19 on emotional problems suggest that the hypothesis is tenable that the 34% of schools reporting that they regularly "counsel disturbed students having emotional problems" do so largely in the absence of referral resources. This behavior might be viewed as "psychiatric first-aid" rather than lack of appreciation of the limitations of one's professional qualifications.

Resources for Communication with the Students

It was reasoned that the potential effectiveness of a guidance program depends, at least in part, on the means used for communicating information to students. The schools were asked to report on the adequacy of printed materials on colleges, occupations, and the military services, and also on the number of different means used to present information to students on colleges, scholarships, occupations, and the military services. All schools

Table 3-20

Percentage of Schools Reporting Availability of Referral Resources in Schools with Guidance Programs

(GP-6. "What facilities for referral are available in your school and community?")

	Type of Service					
	Psychiatrist	Psychologist	Social Worker	Child Guidance Clinic	Speech Clinic	Reading Clinic
Relative Unavailability						
Unavailable or omit	34	29	24	37	32	41
Available only after a long period of waiting	39	33	18	39	31	31
Relative Availability						
Available in the community	21	16	44	20	14	12
Available in the school system	6	18	9	4	14	7
Available in the school	0	4	5	0	9	9
Subtotal	27	38	58	24	37	28
Total	100	100	100	100	100	100

Estimated weighted N from a 96% return is 13,388 schools.

Estimated number of schools with Guidance Programs is 13,935 were asked to report on these items irrespective of whether they reported that they had someone assigned to guidance. On a 95% return the weighted N was about 19,000.

The schools were asked to check a number of different means used for communicating information on colleges, scholarships, occupations, and the military service (GP-28). These methods included 14 different approaches, as follows:

Talks by the counselor
Talks by the faculty members (other than counselor)
Talks by authorities and experts external to the school system
Films and audio-visual means
Bulletin board displays (posters, pictures, etc.)
Printed material (pamphlets, books, floaters, etc.)
Group discussion sessions
Occupational information library
Individual conferences
Career days
Visits to campuses
Visits to industries
Talks by military service recruiters
Talks by company recruiters

A point was assigned for each method checked providing a rough scale ranging from 0 to 14 points. The mean and standard deviation was obtained for each scale. The results were as follows:

Presenting information on colleges	M=6.76;	SD=2.25
Presenting information on scholarships	M=5.06;	SD=2.37
Presenting information on military	M=6.00;	SD=2.42
Presenting information on occupations	M=6.46;	SD=2.62

The resulting scales may be considered to be descriptive of the schools' efforts toward communicating information to the students. The psychometric characteristics of the scales appear to be promising for further study. The means lie near the mid-range of the scales and the sizes of the standard deviations suggest fairly symmetrical distributions. The correlations among these scales were high, ranging from 0.65 to 0.75. The magnitude of these correlations is believed to reflect a general tendency of counselors to use many methods for communicating information to students that is common to all topics. For example, it is likely that if group discussions are used, the discussions would be used for all areas rather than just one. On the other hand, the fact that the correlations were not closer to unity suggests that the scales may have some uniqueness.

It was expected that these scales, reflecting extent of communication efforts, should be correlated with various characteristics of the guidance program. Table 3-21 shows the correlations of these scales with: (a) having someone assigned to guidance; (b) age of the guidance program; and (c) the number of full-time counselors. The highest correlations are with

Table 3-21

Relationships between Communication Efforts and Selected Guidance Program Characteristics

(GP-27. "Does your school have available the following materials for the students' use?")

	Have a Guidance Program+ (GP-1)	Age of The Program* (GP-4)	Number of Full-Time Counselors** (GP-24)
Effectiveness of methods used to present information to students on:			
College	.39	.15	.13
Scholarships	.32	.24	.19
Military	.38	.17	.12
Occupations	.46	.23	.22

+Point biserial correlation coefficients. These items were answered by all schools. On a 98 per cent return the weighted N exceeded 18,700.

*Product - moment correlation coefficients. These items were answered by schools with Guidance Programs. On a 98 per cent return the weighted N exceeded 13,400.

**The correlations with the age of the program and the number of full-time counselors did not include the schools reporting that they do not have someone assigned to guidance. This restriction of range attenuates the resulting correlations. These correlations were not corrected for attenuation.

"having someone officially assigned to guidance" (GP-1). Thus, schools in which someone is assigned to guidance are more likely to make greater efforts to communicate information to students than are schools in which no one is assigned to guidance. Furthermore, the older the guidance program and the greater the number of full-time counselors, the more likely it is that greater efforts will be made toward communicating information.

These results suggest that the information obtained by students of schools in which a guidance program exists may be more comprehensively presented; and that the extent of presentation is dependent in part on the age of the program and the number of full-time counselors. These relationships suggest the process by which information is communicated, but say nothing of the effects on the student body of these communications. If it is assumed that the communications are effective, then the result should be apparent in student behavior.

Attention will be directed in later research to developing criteria of student behavior with which to correlate the present scales. Such data will be available to Project Talent from the follow-up questionnaire in the form of vocational and educational plans and decisions and post high school behaviors. The latter may include entering college, choice of a college major, dropping out of college, and entering an occupation appropriate to college training. Through this research it may be possible to detect differences in student behavior that are related to differences in guidance programs.

Summary

1. In 1960, 73% of the public senior high schools reported that they "...have a guidance program in which one or more persons is officially assigned..." to work with individual students; 52% had a program in 1958 or earlier; and 36% had a program in 1955 or earlier. These figures varied with the size of the senior class, the larger schools having had programs for a greater length of time.

2. Projections for schools having guidance programs in 1962 and 1964, based on schools' reported plans for instituting a guidance program provided estimates of 83% for 1962 and 89% for 1964.

3. Since 1958, gains have been made in facilities and services offered by the guidance programs; 60% of the schools with guidance programs reporting an increase in counselor personnel or services.

4. The schools' plans for expansion of guidance facilities indicated that 70% of the schools with programs were planning to add to their services by 1964.

5. The effect of the National Defense Education Act appears to have been to accelerate the institution of guidance programs in the smaller schools and to provide support for additional personnel and services.

6. Estimates of counselor personnel were obtained from the Guidance Program Questionnaire and the Counselor's Questionnaire. Comparisons were made between the two sources. Student-counselor ratios and counselor-school ratios were also calculated. The results for the number of counselors show 29,754 (both full-time and part-time) estimated from the Guidance Program Questionnaire; 18,211 counselors spending 20% or more of their time in counseling and guidance, estimated from the Counselor's Questionnaire; 14,909 counselors with one or more graduate courses in counseling; 10,055 full-time equivalent counselors; and 5,644 counselors with a graduate course in practicum. Corresponding with these figures, the following student-counselor ratios were obtained: for counselors estimated from the Guidance Program Questionnaire, 250; for counselors spending 20% or more of their time in counseling and guidance, 405; for counselors with one or more graduate courses in counseling, 498; for full-time equivalent counselors, 738; and for counselors with a graduate course in practicum, 1,316. The figures for counselors with a graduate course in practicum provide a ratio

defined in terms of professional qualifications. These data and the data for counselor-school ratios show that the method of estimating a ratio is extremely important and may vary with the purpose of the estimate.

7. The schools' reports on guidance resources show that 42% reported a less than adequate budget, and 68% less than adequate clerical assistance.

8. The guidance services most frequently mentioned as being performed regularly were as follows: administering the testing program; helping students plan their high school programs; pre-college counseling (on an individual rather than group basis); and counseling with individual students achieving below the acceptable scholastic level. The guidance services that appear to need strengthening (i.e., that were infrequently mentioned as being performed regularly) were placement, counseling follow-up, research, and utilization of group methods.

9. Resources for communicating information to students were investigated including printed matter on colleges, occupations and the military services; and the number of different means used to present information to students on college, scholarships, occupations, and the military services. In general, the public high schools that are located in urban areas; that have larger than average senior class enrollments; that have students with above average Reading Comprehension scores; that include the junior-senior high school or senior high school only grade structure; are the ones that have had a guidance program for some time; and have more than the average number of full-time counselors report having "...complete, up-to-date, and well-organized..." printed materials and use a greater than average number of ways to communicate information to students.

10. Plans for further research include obtaining student-counselor ratios for each school and studying these in relationship to duties and functions performed. This analysis should provide an understanding of what can be done with adequate guidance personnel and resources. In addition, data from the Guidance Program Questionnaire and the Counselor's Questionnaire will be related to the students' responses on having seen a counselor and educational and vocational plans. When the student follow-up data has been summarized, relationships will be explored between guidance and counseling and the realization of appropriate educational and vocational goals

Chapter 7 shows relationships of the Guidance Program Questionnaire data to the school taxonomy, exploring relationships with region, city-size, rural-urban location, and socio-economic level of the area surrounding the school.

Section 2 - Counselors

Each school participating in Project Talent was asked in a school questionnaire filled out by the principal if it had a guidance program. Those schools which answered "yes" were then asked to state the number of full-time and part-time counselors in their guidance program. A further request was made which required each person spending 20% or more of his time on counseling duties to complete a counselor's questionnaire. Based upon the returns of the completed questionnaires a total population of counselors spending at least 20% of their time in counseling duties is estimated at approximately 18,000-19,000. The tabulations of the counselors' responses have been summarized according to the following characteristics:

sex and age;
education, courses, and training;
certification;
experience;
salary;
counselor contributions;
distribution of counselor time;
and counselor professional development.

These characteristics are important factors which can contribute to a more accurate understanding of the present quality of a relatively new and growing profession.

There are more men assigned to counseling duties in the American high schools than women (Table 3-22). Of the approximate 17,000 counselors that spend 20% or more time in counseling, about 61% are male. When the number of counselors is defined as persons spending 50% or more time in guidance duties, the approximate numbers are reduced to between 10,000 and 11,000, and the ratio of male to female counselors changes considerably. Women make up 43% of the part-time counselors, as compared to only 39% of all counselors.* In the smaller schools (fewer than 100 seniors) 77% of the counselors spending 50% or more of their time in counseling are male. The larger schools (100 or more seniors) have a ratio of one female counselor for every male counselor.

The median age for counselors is slightly over 40. The small school counselors tend to be younger than the median age. There is a relationship between age and time spent in counseling, with the older persons spending more time in counseling.

Education, Courses, and Training

Approximately 70% of the counselors have a minimum of a master's degree (Table 3-23). Sixty-four per cent of these counselors are men. Those counselors over forty years of age make up 55% of the guidance workers with a master's degree. Those schools with less than 100 seniors have the largest proportion of counselors who do not have a minimum of a master's degree. More than one in three of counselors in these schools do not have a master's degree.

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*It will be noted that in Table 3-22 only one age group of women is larger than men, that is in the group with more than 10 years' experience.

Table 3-22

Counseling and Guidance Experience
By Sex and Age

(CQ-10. "Amount of counseling and guidance experience"*)

	Sex				Age			
	Male		Female		Under 40		40 and Over	
Counseling and Guidance Experience	N**	%	N**	%	N**	%	N**	%
More than 10 years	1,649	16	1,908	29	132	2	3,424	39
5 or 10 years	2,555	24	1,934	30	1,890	23	2,599	30
3 or 4 years	2,198	21	896	14	1,887	23	1,207	14
1 or 2 years	2,168	21	883	13	2,316	28	735	8
Less than 1 year	1,537	15	885	13	1,816	22	606	7
Omit	258	3	95	1	139	2	213	2
Total	10,365	100	6,601	100	8,180	100	8,784	100

*For exact wording see Appendix

**School weight B was used which reproduces the total population of Counselors.

It must, however, be pointed out that this does not mean that those persons with at least a master's degree are fully qualified counselors, for there is evidence that degrees have been obtained in fields other than counseling and guidance. A more precise and valid indicator of counselor quality would be the amount of course work in the area of guidance.

Table 3-24 gives a picture of the graduate courses that counselors have had in counseling and guidance. This picture indicates a paucity of specific guidance and counseling training of a large percentage of the American secondary school counselors. It should be remembered that four hours or less of graduate credit in specific courses might be all that is offered or required in many guidance and counseling programs. But the opposite is also true, that many areas require much more than four graduate credit hours to attain the adequacy of preparation recommended by counselor trainers.

Guidance workers appear inadequately trained when a review of their course work is made. However, 79% of the counselors have had some courses in introduction to counseling; 70% have had philosophy and principles of guidance; 66% have had organization and administration; and 57% have had a

Table 3-23

Counselor's Education
(CQ-11)
by Size of Senior Class

	Number of Counselors*						
	Size of Senior Class						
Counselor's Education	0-24	25-99	100-399	400 up	Unclassified	Total	% of Total
Doctor's degree	0	44	0	58	13	115	1
Master's plus credit toward Doctorate	716	1880	2971	1070	216	6,853	38
Master's degree	736	1737	2094	920	98	5,585	31
Bachelor's plus credit toward Master's	665	1509	1537	446	77	4,234	24
Bachelor's degree	428	166	238	50	2	884	5
High school or some college	0	0	0	0	17	17	0
Omit	50	108	43	26	8	235	1
Total	2595	5444	6883	2570	431	17,923	100

*School weights B were used to reproduce the population of counselors.

Table 3-24

Courses Taken by Counselors with Graduate Credit Hours in Each*

(CQ-12. "How many courses have you taken in each of the following areas?") **

	Per Cent of Counselors			
	Graduate Credit Hours			
Course Areas	7 or more	4 - 6	1 - 3	None or Omit
Counseling	29.5	26.8	22.2	21.4
Analysis of the Individual	20.4	25.9	25.0	28.6
Educ. & Occup. Information	2.9	19.8	34.3	43.0
Philosophy & Principles	9.9	24.2	36.3	29.7
Organization & Admin.	19.6	21.7	24.9	33.7
Methods of Research	5.5	17.9	30.1	46.5
Psychological Foundations	20.7	21.4	20.6	37.3
Practicum	3.7	9.3	16.7	70.2
Group Procedures	1.6	7.0	22.7	68.8
Sociological Foundations	3.1	6.6	15.4	74.9
Placement	0.7	3.6	14.9	80.7
Follow-up & Evaluation	0.8	2.8	15.5	81.0
Economic Foundations	1.4	4.1	7.2	87.2

*For description of typical courses describing each area see Appendix.
**For exact wording see Appendix.

course in educational and occupational information. Course areas where over 50% of the counselors have had some training, but where four graduate credit hours would not appear to be sufficient, are: analysis of the individual, 54% have had less than four hours of graduate course work; 77% have had less than four hours of methods of research; 58% have had less than four hours of psychological foundations; 90% have had little or no sociological foundations; 70% have had no counseling practicum and about 17% have had less than four hours; and 69% have had no training in group work at the graduate level. For such subjects as placement, follow-up and evaluation, and economic foundations the table shows that a large majority of guidance workers have had no courses in them at all. This might be accounted for by the fact that many guidance curricula do not have separate courses in placement, follow-up, and evaluation; and many programs do not require economic foundations. Therefore, this could explain the large number who have not had such courses.

When the counselor group is pared down by including only those spending 50% or more of their time in counseling and guidance duties, the ratios do not change significantly. In comparing counselors of small schools (who are spending 50% of their time with guidance responsibilities) with their counterparts in the larger schools, it appears that counselors from smaller schools are more adequately trained, as indicated by course work. The reverse of this is true when all counselors are compared.

The counselors were asked if they had received any counseling and guidance training in college (CQ-16). Only 18% said they had not received any training in college. In considering only those counselors who spend 50% of their time with guidance duties, the per cent drops to 10 who have not received any training in college.

Certification

Approximately 8,000 school counselors are certified or licensed by their state. This means that 42% are certified or licensed. When a breakdown by school size for the whole group is made, 50% of the counselors of large schools are certified as compared to 31% for small schools. If only those counselors who spend 50% of their time in guidance are considered, there is no difference. Both small and large schools, then, indicate that 43% of their counselors are certified. The analysis of the findings pertaining to training and course work makes it apparent that certification requirements are minimal. This does not appear to be in the best interest of the profession or the students whom these counselors serve. This is a serious problem and the profession should give it the attention necessary to create continuing improvement of its practitioners.

Experience

Approximately 82% of all counselors have had at least five years of teaching experience (Table 3-25). Of the counselors with five or more years of teaching experience 55% come from schools with senior classes of 100 or more. Less than 1% of all counselors have less than a year of teaching experience. Apparently the only major source of counselors and guidance

Table 3-25

Counselor's Teaching Experience By Size of Senior Class (CQ-9) **

	Number of Counselors*						
	Size of Senior Class						
Counselor's Teaching Experience	0-24	25-99	100-399	400 up	Unclassified	Total	% of Total
More than 10 yrs.	953	2591	4211	1827	353	9,935	55
5 to 10 years	937	1723	1673	490	52	4,875	27
3 or 4 years	391	688	564	117	11	1,771	10
1 or 2 years	207	315	288	45	4	859	5
Less than 1 yr.	0	21	40	39	3	103	1
None	0	0	41	0	3	44	0
Omit	107	106	65	91	8	377	2
Total	2595	5444	6882	2609	434	17,964	100

*Schools weighted to reproduce the national population of counselors.
**For exact wording of this question see Appendix.

workers is from the field of teaching.

Of all the counselors 48% have had 5 or more years of counseling experience (Table 3-26). Approximately 83% of the counselors in the smaller schools had a minimum of 1 or 2 years of counseling experience. Schools with senior classes of more than 100 students had 87% of their counselors with a minimum of 1 or 2 years of counseling experience.

Fifty-eight per cent of all the women in counseling have had more than five years of counseling experience. There are at present fewer women in counseling than men; yet there are more women than men with at least a minimum of 10 years of counseling experience. This would indicate that there were more women than men in the counseling field in the early years, but within the last 10 years there has been a definite trend for counseling to become more and more a man's profession, as indicated by more men than women in the profession. Also the ratio of men to women at the lower levels of experience is approximately 2 to 1 favoring the men.

Table 3-26

Counseling and Guidance Experience By Size of Senior Class (CQ-10)**

	Number of Counselors*						
	Size of Senior Class						
Counseling and Guidance Experience	0-24	25-99	100-399	400 up	Unclassified	Total	% of Total
More than 10 years	321	877	1777	680	170	3,825	21
5 to 10 years	475	1290	1922	384	136	4,707	27
3 to 4 years	304	1100	1373	424	54	3,255	18
1 to 2 years	917	1202	859	246	34	3,258	18
Less than 1 yr.	528	829	901	271	25	2,560	14
Omit	50	147	65	104	11	377	2
Total	2595	5445	6903	2609	430	17,982	100

*Schools weighted to reproduce the population of counselors.
**For exact wording of this question see Appendix.

Salary of Counselors

From Table 3-27 it will be seen that the median salary for counselors is $6,170 per year, and the average salary $6,859. Other findings of Project Talent indicate that there is a positive correlation between senior class size and teachers' salaries. This same relationship is indicated in reference to class size and counselors' salaries. There are, however, other factors which also have a high relationship with salaries and in most cases play an important part in salary agreements. They are: years of teaching experience, years of counseling experience, and education and training. The findings of the counselor questionnaires support these relationships.

It should be noted that only two per cent are paid $9,000 or more per year; yet 21% have had more than 10 years of counseling experience, and 55% have had more than 10 years of teaching experience. This suggests that counselors' salaries are limited by schedules and no doubt they are on the same schedules as teachers. The two per cent receiving more than $9,000 could well have administrative responsibilities, or could be on a longer school year. However, our questionnaire was not designed to shed light on this aspect. Table 3-28 shows the number of months worked per year. Approximately 49% of the counselors are paid for 10 months of service. In the larger school systems, over 60% have a 10 month year while smaller schools are split between the nine-month school year and the ten-month term. Few counselors are serving more than ten months; but 22% of the counselors from

Table 3-27

Counselor's Current Salary by Size of Senior Class

(CQ-5. "Current salary in present position for the school year.")

	Number of Counselors*						
	Size of Senior Class						
Counselor's Current Salary	0-24	25-99	100-399	400 up	Unclassified	Total	% of Total
$9000 and over	0	0	138	132	49	319	2
$8000-8999	50	146	481	502	242	1,421	8
$7000-7999	50	580	1780	830	51	3,291	18
$6000-6999	663	1353	1995	728	27	4,766	26
$5000-5999	810	1633	1191	349	29	4,012	22
$4000-4999	525	1101	1000	58	20	2,704	15
$3000-3999	440	588	316	13	8	1,365	8
Less than $3000	57	63	0	0	3	123	1
Omit	0	0	0	0	3	3	0
Total	2595	5464	6901	2612	432	18,004	100

*School weights B were used to reproduce the population of counselors.

small schools are hired for a twelve-month period, as compared to only 9% for the larger schools. This might imply that these counselors have other administrative responsibilities.

Counselor Contributions

The counselors were asked to choose from among seven items the three most important contributions that might be made to the lives of their students. These items were stated to show the value orientations of the counselor. The findings are:

1. "Help students make effective use of their abilities" was ranked by 81% of the counselors. Guidance workers felt this was their most important contribution to students.

2. Seventy-two per cent felt "aiding students in increasing their self-understanding" was an important contribution that the counselor could make. There was a trend for counselors to rate this contribution higher, the more time they spent in counseling.

Table 3-28

Number of Months Counselors Worked
for Salary by Size of Senior Class

(CQ-4. "For how many months work is your salary paid?")

	Size of Senior Class					
	(0-99)		(over 100)		Total	
No. Months	No.*	%	No.*	%	No.*	%
12	1818	21.6	970	9.2	2788	14.7
11	558	6.6	589	5.6	1146	6.0
10	2859	34.0	6415	60.7	9276	48.9
9	2983	35.4	2179	20.6	5161	27.2
8	21	.2	24	.2	45	.2
Omit	178	2.1	386	3.7	563	3.0
Total		100.0		100.0		100.0

*Weighted to reproduce the national population of counselors.

3. Thirty-three per cent did not rank "to help students make educational and vocational plans" as one of three most important contributions counselors can make to students. Those counselors who spent more time in guidance considered this contribution as less important.

4. "To help students develop a sense of values" was ranked important by only 45% of the counselors. Full-time counselors tended to rate this more important than part-time counselors.

5. Forty per cent of the counselors indicate that helping students adjust to school life and its requirements is a major function of guidance. Those who spend less time counseling think this contribution is less important. Counselors in small schools tend to feel this is more important than counselors in large schools.

6. "Help students solve personal problems" was not ranked by 76% of the counselors. Counselors spending less time in counseling tended to rank this contribution as important. The same seemed to be true for counselors from small schools

7. Seventy-seven per cent of the counselors indicated that helping students in getting along with others was not one of the major functions of a guidance worker. The more time a counselor spent in guidance duties, the less important he considered this contribution.

Distribution of Counselor's Time.

A breakdown of the amount of time counselors spend on the different guidance functions (Table 3-29) indicates that most functions are each given

Table 3-29

Per cent of Guidance and Counseling Time Devoted to Various Guidance Functions (GQ-7)

(GQ-7. "On the average, what per cent of your counseling time is spent in each of the following functions?")

	Percent of Counselors	
Guidance Functions	0 - 14% of time	15% or more of time
Counsel with individuals	5	95
Counsel with parents	85	15
Counsel with group	84	16
Testing	76	24
Staff Discussion	88	12
Report and case studies	91	9
Clerical work	71	29
Supervision	96	4
Other	96	4

less than 15 per cent of a counselor's time. The exception to this is that 95 per cent of the counselors spend more than 15 per cent of their allotted guidance time counseling with individuals. School size appears to have no effect upon the time spent in these functions except in counseling individual students, clerical work, and testing. Counselors from larger schools report spending more time in these functions than counselors from the small schools. Few conclusions can be drawn from the present data. However, analyses are being planned that will give a clearer picture of the amount of time spent in guidance functions.

Counselor Professional Development

Many authorities assume that membership in professional organizations, attendance at professional meetings, and the reading of professional journals are indicators of professional development. Therefore, in order to evaluate these three measures of professional development of counselors, a study of them was made.

Table 3-30 shows that twenty-four per cent of all guidance workers who spend at least 20% of their time in guidance services are members of A.P.G.A. Thirty-five per cent of the counselors who spend at least half-time on counseling duties are members. The per cent of membership increases to 33% and 43% respectively when other guidance associations are mentioned. These other guidance associations are other national associations such as American Vocational Association, as well as regional, state, and local guidance associations. This seems low, particularly in regard to those who spend over half their time in guidance and counseling duties.

Table 3-30

Membership in Professional Organizations (CQ-14**)

	Full-time Counselors		Part-time Counselors*	
Organization	No.	%	No.	%
A.P.G.A	4630	24.4	3731	35.2
A.P.A.	372	2.0	279	2.7
Other Guidance Associations	6174	32.5	4533	42.9

* Working only 50% of time or more in counseling and guidance.
** For exact wording see Appendix.

The reading of professional journals (Table 3-31) indicates a definite trend toward professionalism and keeping up with the literature in the field. The Personnel and Guidance Journal is read occasionally or regularly by 46 per cent of all counselors and by 86 per cent of those counselors spending a minimum of half-time in counseling. This is encouraging since only 24 per cent and 35 per cent, respectively, are members of A.P.G.A. The Journal is apparently passed around, particularly in the larger schools, since the per cent reading the Journal in the smaller school is substantially less in both groups of counselors. The other journal which counselors in large schools read more often than in small schools is the Journal of the National Association of Women Deans and Counselors. The N.E.A. Journal, of all professional journals, is the most widely read by counselors. A higher percentage of counselors from the small schools read this journal than large schools. The National Vocational Guidance Quarterly and the School Counselor are read at least occasionally by about the same number of counselors, and school size has no apparent relationship. It appears that state and local journals receive little attention.

Table 3-31

Per Cent of Counselors who Read Professional Journals

(CQ-13. "Which of the specialized periodicals in the guidance field do you read?")

Journal	Full-time Counselors		Part-time Counselors*	
	Regularly or Occasionally	Rarely, Never	Regularly or Occasionally	Rarely, Never
Personnel and Guidance Journal	45.5	54.5	85.7	14.3
National Vocational Guidance Quarterly	34.9	65.1	43.8	56.2
School Counselor	38.3	61.7	45.7	54.3
J. of the National Association of Women Deans and Counselors	8.9	91.1	11.4	88.6
N.E.A. Journal	86.7	13.3	86.7	13.3
Other National	16.9	83.1	19.0	81.0
State and Local	14.3	75.7	14.7	74.3

*Working only 50% of time or more in counseling and guidance.

Table 3-32 shows the per cent of counselors who attend the various guidance meetings. More counselors from large schools attend meetings than counselors from small schools, with the exception of state meetings. Only 12% of all counselors have ever attended national meetings, but 42% have attended regional meetings, and 62% have attended state meetings. The number drops to 50% for city meetings. This probably indicates that many systems are too small to hold city or local meetings. A closer evaluation of meeting attendance points up that the number who do not attend any meetings appears to be quite substantial. If the number of counselors from large schools who do not attend any meetings (which are apparently the city or local meetings) is added to the number of counselors from the small schools who do not attend any meetings (which would be those who do not attend state meetings), approximately 30% would be left who do not attend a professional guidance meeting of any kind. This estimate is a little high because it is possible that some attended one meeting and not another. When only those counselors who spend 50% of their time in guidance are considered, the per cent who do not

Table 3-32

Counselors Attendance at Professional Meetings

(CQ-8. "Have you attended professional society meetings of guidance or counseling personnel?")

Type of Conference	Attend.	Per Cent of Full-Time Counselors					
		Size of Senior Class					
		0-24	25-99	100-399	400 up	Unclassified	Total
National	No	100	91	85	79	86	88
	Yes	-	9	15	21	14	12
Regional	No	77	57	49	64	71	58
	Yes	23	43	51	36	29	42
State	No	51	33	30	48	78	38
	Yes	49	67	70	52	22	62
City	No	82	72	31	25	24	50
	Yes	18	28	69	75	76	50

attend increases a few points. It should be remembered that this is not an accurate picture but only a very crude estimation. There is however, an observable relationship of time spent in counseling and attendance at meetings. The per cent of those attending meetings increases with the amount of time spent on guidance and counseling duties.

There are a number of factors which indicate professional development of guidance workers and counselors. A look at some of these factors shows that as counselors and guidance workers spend more time with guidance functions they improve their professional development. This then is a healthy sign of a new and growing profession.

Summary

The findings herein reported have been based on a nationwide stratified random sampling of public senior high schools. Weights were applied to reproduce the estimated population of 18,000 to 19,000 secondary school counselors. In brief summary, the findings were:

1. There are 18,000 to 19,000 counselors in American public senior high schools who spend at least 20 per cent of their time with counseling duties. Of these, approximately 11,000 spend half of their time or more with specific guidance responsibilities.

2. The median age of counselors is slightly over 40.
3. Sixty-two per cent of all counselors are men. This is a change that has come about in the last ten years.
4. The master's degree is held by almost 70% of all counselors. However, a check of graduate guidance courses taken by counselors indicates that many did not receive their degree in guidance and counseling, psychology, or personnel.
5. Eight thousand, or 42%, of all counselors are certified or licensed by their state.
6. Ninety-two per cent of all counselors have had a minimum of three years teaching experience. Eighty-three per cent have had at least three years of counseling experience.
7. The median salary for counselors is approximately $6,200. The majority of counselors work only nine or ten months a year.
8. Counselors feel their greatest contribution is to help students make effective use of their abilities.
9. The greatest share of a counselor's time is spent in counseling with individuals.
10. Counselors are not joiners in professional organizations, but in general read the journals at least occasionally, and a good per cent attend at least some kind of guidance meetings.

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Chapter 4

A SYSTEM FOR CLASSIFYING PUBLIC HIGH SCHOOLS

The Need for a Classification System

There are about 19,000 public senior high schools in the United States and probably no two of them are completely alike in all respects. They vary tremendously in enrollment, class size, per-pupil expenditure, faculty, structure, type, programs, facilities, and policies. It is therefore essential that the schools be classified into meaningful groups for reporting census results and for studies of relationships between school characteristics and outcomes of school activities.

Normative distributions of test scores and of school characteristics are much more meaningful when reported for similar groups of schools as well as for the entire nation. When developed such norms will be of particular value to those schools substantially above or below the national average. A school in the lower 20% in achievement in English for the nation as a whole might be in the upper 10% of the group of schools classified in terms of community characteristics. It has also been found that statistics such as means and correlation coefficients based on the entire nation may be very misleading when applied to specific groups of schools. It has been found, for example, that size of school may have a positive relationship with achievement for some categories of schools but a negative relationship for others.

The Location Factor and School Performance

Preliminary studies of the Project Talent data indicate that by far the most important school characteristic is its location--the location of its community and its location within that community. Other things being equal, location is an important factor influencing the results obtained by a given school. In some locations serving homes in favored environments, it is much easier to obtain high achievement and similar educational results than it is in other locations serving homes in unfavorable environments. This shows up dramatically in our largest cities. The achievement levels of the lowest and highest academic high schools within any one of our largest cities differ far more than do the average achievement levels of the highest and lowest Regions of the country. The reasons for this are many and complex, but most of them are not under the control of the principal and the staff of a given school. Thus, the location factor needs to be quantified and properly controlled, or held constant in the norms for achievement tests or other measures of school outcomes. One way to accomplish this is to develop a system for classifying schools according to location. The factors which have been noted to be of most importance in determining educational achievement have been found by many investigators to be such things as socio-economic status of parents, whether the school is rural or urban, and the section of the country in which the school is located. Preliminary studies of Project Talent concur on the importance of these factors based on an intercorrelation study of many test, school, and community characteristics.

Regional Differences

Regional differences in test performance have long been recognized and studied. Many studies have found that students in some Regions have average scores much lower on some aptitude and achievements tests than students in other areas. We have also found this to be true in Project Talent. The averaged state medians of school mean scores on Total Information Test (R-190) for 12th grade boys for modified U.S. Office of Education Regions range from about 154 to about 122. This corresponds to a range from the 63rd percentile to the 34th percentile. Individual states varied within a considerably greater range. Ranges of similar magnitude have been found for such tests as Mathematics Information (R-106), Physical Sciences Information (R-107), Mechanical Information (R-112), English achievement (R-230), and Mathematics achievement (R-340).

Regional differences in Project Talent test scores have been studied in order to decide how best to consider Region as a factor in our taxonomy of schools. Because of the limitations of size of sample, an efficient classification system should not exceed 3 x 3 x 2, or 18 classifications or groups. If possible, the nine U.S. Office of Education Regions should be grouped into not more than three homogeneous groups of contiguous Regions.

Table 4-1 shows the states in each of the nine U.S. Office of Education Regions.

Table 4-2 shows the breakdown of public schools by size category and Region. It can be seen here that the Regions differ tremendously in their distribution of sizes of school, particularly when the over-sampling in New York and Chicago are removed. The relationship between Region and school size is very high. Therefore, when schools of different sizes are compared directly in relation to school outcomes, the differences are largely really a reflection of regional differences. Regional differences in turn are largely reflections of rural-urban and socio-economic factors. When these are held constant, regional differences are greatly reduced. It is for this reason that the entire country can be divided into only three groups of Regions and still have very homogeneous sub-groups of schools in each classification.

Table 4-1

Composition of Geographical Regions used by the U.S. Office of Education

(1) NEW ENGLAND
- Connecticut
- Maine
- Massachusetts
- New Hampshire
- Rhode Island
- Vermont

(2) MIDEAST
- Delaware
- District of Columbia
- Maryland
- New Jersey
- New York
- Pennsylvania

(3) GREAT LAKES
- Illinois
- Indiana
- Michigan
- Ohio
- Wisconsin

(4) PLAINS
- Iowa
- Kansas
- Minnesota
- Missouri
- Nebraska
- North Dakota
- South Dakota

(5) SOUTHEAST
- Alabama
- Arkansas
- Florida
- Georgia
- Kentucky
- Louisiana
- Mississippi
- North Carolina
- South Carolina
- Tennessee
- Virginia
- West Virginia

(6) SOUTHWEST
- Arizona
- New Mexico
- Oklahoma
- Texas

(7) ROCKY MOUNTAINS
- Colorado
- Idaho
- Montana
- Utah
- Wyoming

(8) FAR WEST
- California
- Nevada
- Oregon
- Washington

(9) NON-CONTIGUOUS STATES
- Alaska
- Hawaii

Table 4-2

Distribution of Public Senior High Schools in Project Talent Sample by U.S. Office of Education Region and Size Category

	Region										Breakdown Region 2		Breakdown Region 3	
Size	1	2	3	4	5	6	7	8	9	Total	NYC	Not NYC	CHI	Not CHI
1	4	3	15	34	33	24	8	3		123	0	3	0	15
2	16	45	87	63	142	35	11	14		410	3	42	1	86
3	12	66	39	12	37	10	3	13	2	193	32	34	9	30
4	1	54	19	3	4	4	2	4		91	50	4	10	9
Total	33	168	160	112	216	73	24	34	2	822	85	83	20	140

Note - Grade 12 Students:

Size 1. 0-24

Size 2. 25-99

Size 3. 100-399

Size 4. 400 or more

Other factors such as per-pupil expenditure, per capita-income, per cent urban, per cent of personal income spent on schools, increase in expenditure per pupil 1950 to 1960, and other similar factors have been studied and considered for inclusion in the school classification system.

Figure 4-1 shows the relationship between per-pupil expenditure and Total Information Test (R-190) score (12th grade boys) by modified Office of Education Region. Region 5, Southeast, has been split into 5A (Alabama, Arkansas, Georgia, Kentucky, Louisiana, Mississippi, and South Carolina) and 5B (Florida, North Carolina, Tennessee, Virginia, and West Virginia). This grouping is based on the way these states tend to cluster together when test scores are plotted against per-pupil expenditure, per-capita income, and similar factors. Region 9 (Hawaii and Alaska) is omitted. The correlation for the Regions in Figure 4-1 is .876. When computed for states, r=.691. Figure 4-2 shows similar data with Cities A and B removed and separately plotted.

Table 4-3 presents correlations between Mechanical (R-112), Mathematics (R-106), Physical Sciences (R-107), and Total Information (R-190) school means (12th grade boys) and various other factors and combinations of factors for the 9 Regions. Table 4-4 reports multiple correlations and Beta weights for various combinations of tests of special interest from Table 4-3. While these correlations are based on only nine statistical units, each statistical unit is a mean based on many thousand cases. The multiple R's for combinations of per cent urban, per-pupil expenditure and per-capita income in Table 4-4 tend to be only slightly higher than the highest validity of each pair or trio. Per-capita income correlates .880 with Total Information; adding per-pupil expenditure to this raises the correlation to .890 and adding per cent urban raises it to .896.

Figure 4-3 shows the relationship between Army Alpha (white literate draftees, 1918, Yerkes) and Total Information (R-190) score for 12th grade boys. The average Army Alpha score for each Region is plotted against the mean of state medians of school means of Total Information. When computed by Region, r=.881; by state, r=.732. For Army Alpha plus National Merit (by Region) r=.962.

Figure 4-4 shows Mechanical Information (R-112) by Region plotted against Total Information (minus Mechanical Information). The r=.893. It may be seen from the figure that Region 2 is very markedly below the regression line based on the other Regions. The level of Mechanical Information there is quite low compared to the level of other information. When the five largest cities (New York, Chicago, Los Angeles, Philadelphia, and Detroit) are plotted, they are substantially below the regression line. One guess for a possible reason is that in the very large cities fewer families have automobiles and very few do their own maintenance (having no yard in which to park the car while repairing it). They also make less use of hand tools.

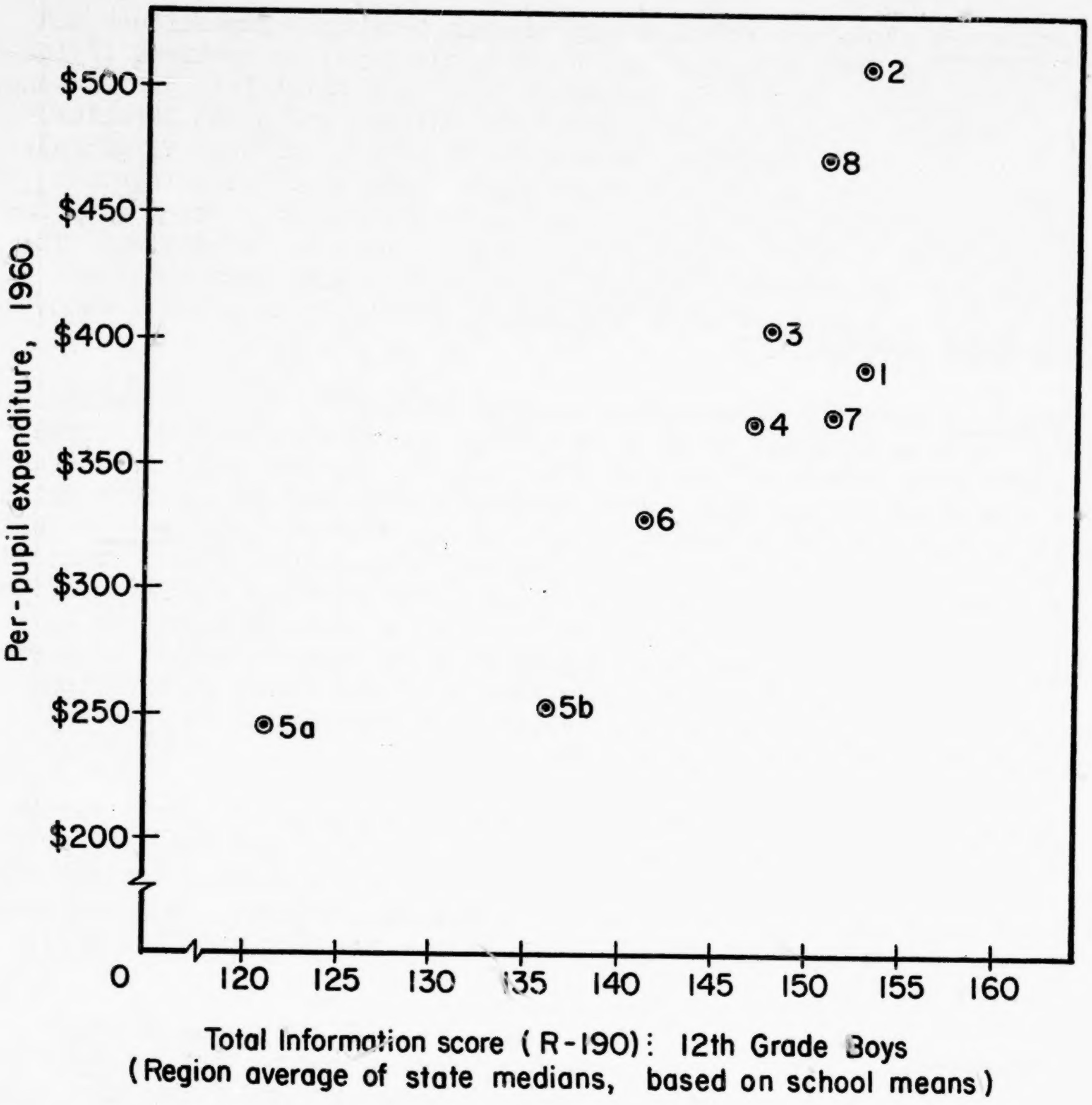


Figure 4-1. Total Information (R-190) test score means for Grade 12 boys (Region average of state medians), and Per-Pupil Expenditure (GSC-89)

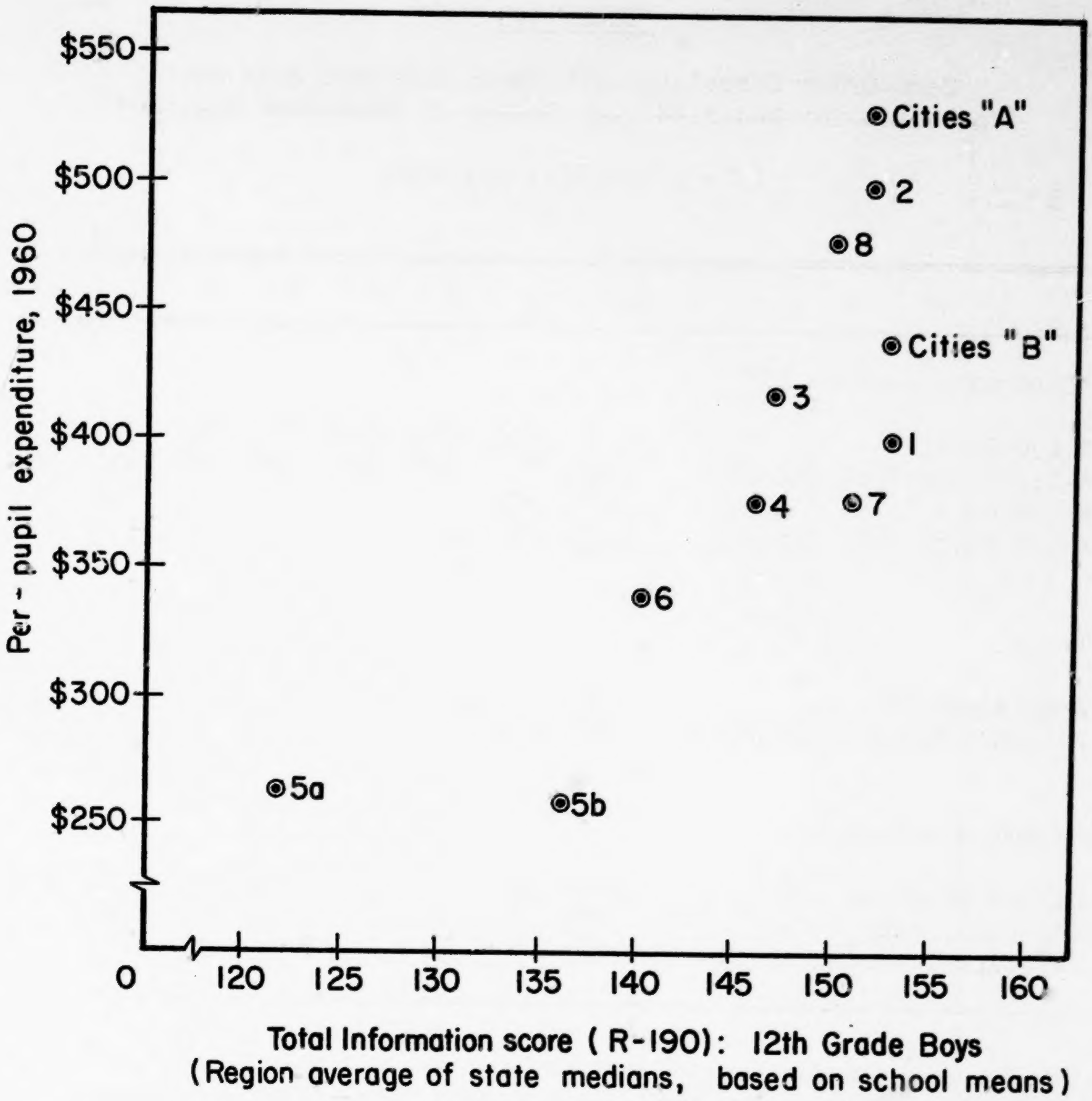


Figure 4-2. Total Information (R-190) test score means for Grade 12 boys (Region average of state medians minus Cities A and B), and Per-Pupil Expenditure (GSC-89)

Table 4-3

Zero-Order Correlations between Selected Regional Variables for Modified U.S. Office of Education Regions*

(N = 9 modified regions)

	1	2	3	4	5	6	7	8	9
Talent Information--Part I**									
1. R-190 Total		.893	.942	.973	.881	.869	.773	.876	.880
2. R-112 Mechanical Info.	.893		.872	.886	.846	.646	.634	.587	.713
3. R-106 Math Info.	.942	.872		.968	.857	.841	.848	.805	.855
4. R-107 Phys. Sci. Info.	.973	.886	.968		.852	.793	.749	.776	.795
Other Tests									
5. Army Alpha***	.881	.846	.857	.852		.655	.671	.733	.787
6. National Merit Schol.****	.869	.646	.841	.793	.655		.746	.793	.852
Economic and Geographical									
7. Per cent urban--1960	.773	.634	.848	.749	.671	.746		.878	.923
8. Per-pupil expenditure--1959	.876	.587	.805	.776	.733	.793	.878		.947
9. Per-capita income--1959	.880	.713	.855	.795	.787	.852	.923	.947	

*D.C., Hawaii, and Alaska not included

**Unweighted means of state medians of school means (Grade 12 boys)

***Unweighted means of state medians from Yerkes' distribution of 40,000 white literate draftees in 1918 (no data for New Jersey)

****High school graduates in 1961 who were semi-finalists or received letters of commendation, expressed as a percentage of total number of high school graduates in 1958

Table 4-4

Multiple Correlations and Multiple Regression Coefficients for Predicting Test Score Levels for Region from Other Regional Characteristics

(Based on the data of Table 4-3)

		Beta weights				
Criterion Variable	Multiple R	#5 Army Alpha	#6 Nat'l Merit Schol.	#7 Per Cent Urban	#8 Per-Pupil Exp.	#9 Per-Capita Income
1. R-190	$R_{1.56} = .962$	.546	.511			
	$R_{1.78} = .876$			.017	.861	
	$R_{1.79} = .886$			-.265		1.124
	$R_{1.89} = .890$				.413	.488
	$R_{1.789} = .896$			-.279	.426	.734
2. R-112	$R_{2.89} = .764$				-.855	1.522
	$R_{2.78} = .637$			.518	.132	
	$R_{2.79} = .716$			-.163		.863
	$R_{2.789} = .766$			-.143	-.852	1.652
3. R-106	$R_{3.78} = .857$			.616	.264	
5. Army Alpha	$R_{5.79} = .802$			-.372		1.132
6. Nat'l Merit Schol.	$R_{6.79} = .858$			-.273		1.103

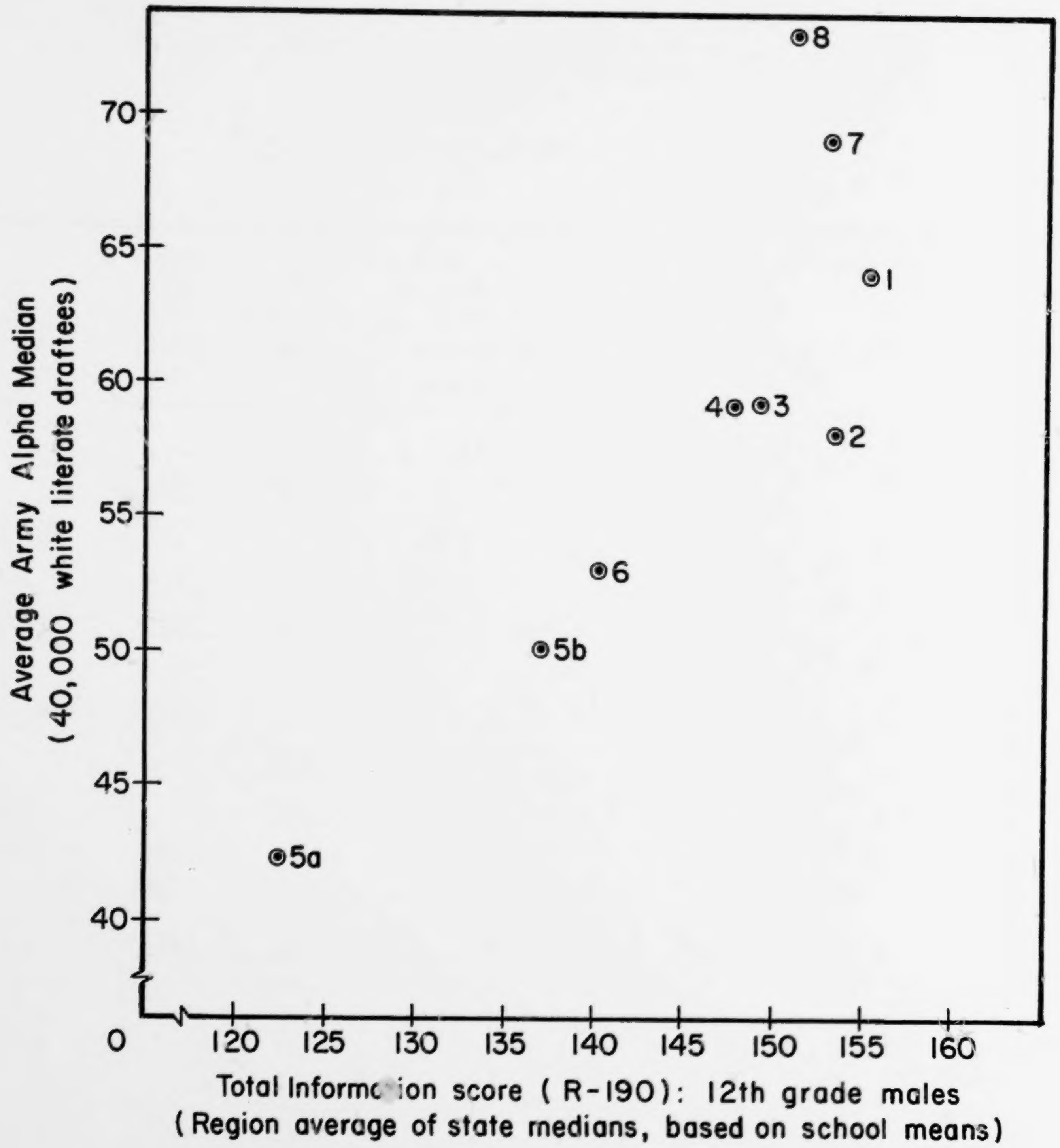


Figure 4-3. Total Information (R-190) test score means for Grade 12 boys (Region average of state medians), and average Army Alpha medians

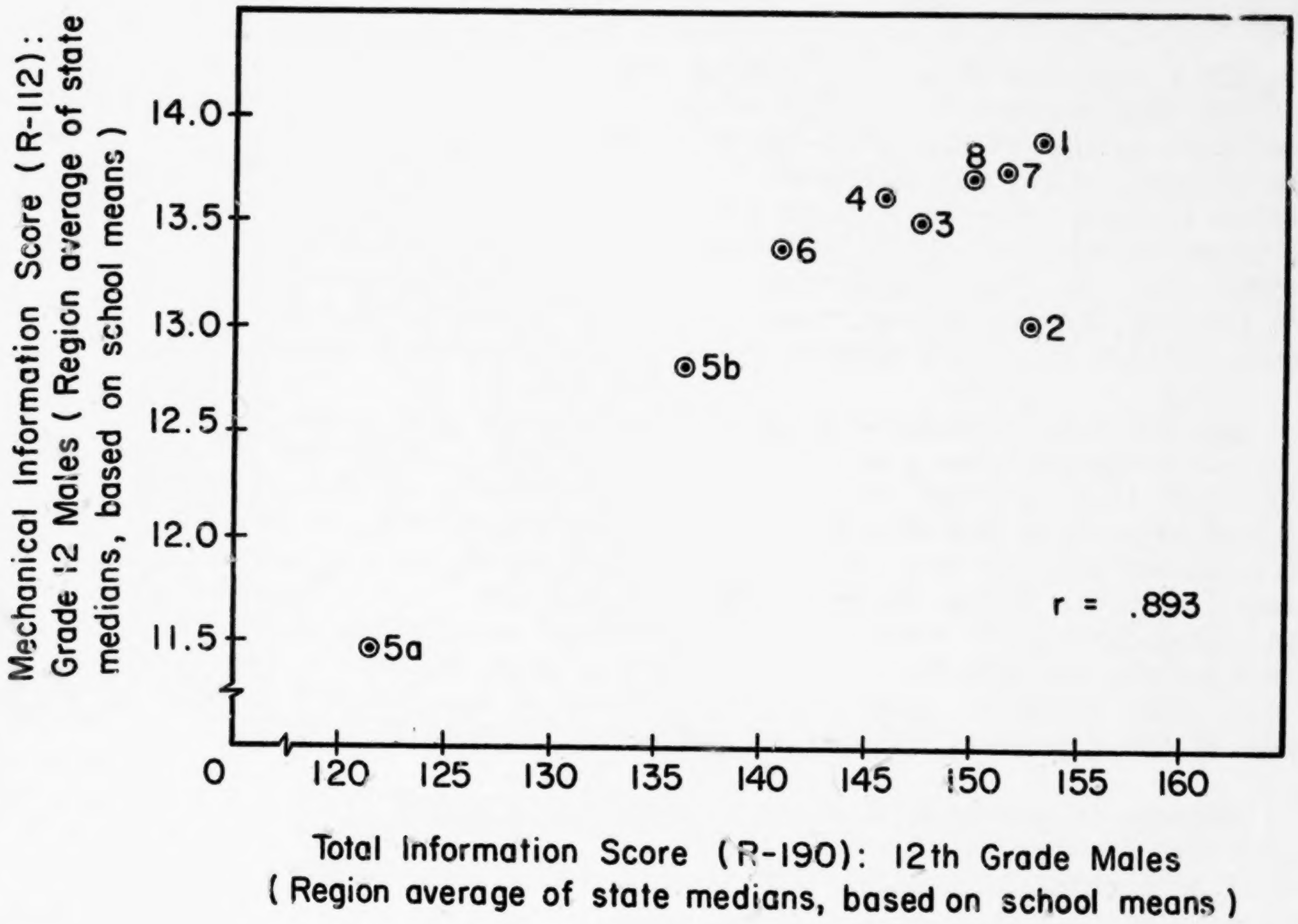


Figure 4-4. Total Information (R-190) test score means for Grade 12 boys (Region average of state medians), and Mechanics Information (R-112) test score means for Grade 12 boys (Region average of state medians)

The Classification System

After experimenting with various combinations it was finally decided that the nine regular U.S. Office of Education Regions should be classified into three groups of Regions. These include: first--Northeast 1 combined with Mideast 2; second--Southeast 5; and third--the other six Regions. The schools in each group of Regions are then classified as rural, small-town, and urban or suburban (over 5,000 population). The urban schools then are divided into two groups according to the type of neighborhood served (low cost housing, low rental apartments, and low income versus all other responses to item 87 in the General School Characteristics Questionnaire.

The suburban schools were examined to see if they should form a separate group. It was found that they were not different from the residential urban (moderate and high cost housing) schools in cities of 5,000 to 249,999 population and they were accordingly combined into the same category. The suburban schools were closely similar to urban residential area schools in such respects as per-pupil expenditure and student performance. The per-pupil expenditure for suburban schools varies greatly but averages little more than the average for all schools. The distribution is similar to that of the urban schools. Less than 5% of them are similar to the popular image of the expensive Eastern suburban school.

Because it has been found that location in a city of 250,000 or more population is more important than Regional location, schools in such cities should be separately studied. Of these, those in cities of 1,500,000 or more population should be a separate group. Each of the two groups of city schools should then be subdivided according to type of neighborhood served.

Finally, vocational high schools--regardless of the other factors--form a very homogeneous group and should be studied separately. This gives a total of 17 major groups of public schools similar enough in situation and location to justify comparisons among schools in the same group. The categories are shown in Table 4-5.

The 17 major groups should be especially useful for the development of achievement test norms for special classes of schools that are similar enough in situational characteristics to permit legitimate comparisons. The schools within each group, for example, can see how their students compare with other schools similar to them as well as how they compare with all schools nationally.

Most of the 17 categories include enough schools to permit one further split or breakdown. This might be done by expenditure level, size, type of curriculum, non-verbal aptitude level or the like. Two such sub-groups within a category could then be compared in terms of some measured school outcomes and the comparison would then be relatively free of the location factor and should be far fairer than a direct comparison.

Further refinements of the classification system might later utilize information about the pattern of father's occupation for the students in each school. Preliminary studies indicate that the per cent of occupations

Table 4-5

Taxonomy of Public Senior High Schools

Code	Description	N
10	All vocational high schools	35
21	Cities A - low cost housing - low income	27
22	Cities A - moderate and high cost housing	55
31	Cities B - low cost housing and low income	5
32	Cities B - moderate and high cost housing	21
41	Northeast - urban - low cost housing and low income	4
42	Northeast - urban - moderate and high cost housing	47
43	Northeast - small-town	31
44	Northeast - rural	22
51	Southeast - urban - low cost housing and low income	24
52	Southeast - urban - moderate and high cost housing	45
53	Southeast - small-town	42
54	Southeast - rural	101
61	West - urban - low cost housing and low income	11
62	West - urban - moderate and high cost housing	83
63	West - small-town	138
64	West - rural	131
Total		822

Note. City sizes:

Cities A - more than 1,500,000 population (1960 census)
Cities B - between 250,000 and 1,499,999 population (1960 census)
Urban - between 5,000 and 249,999 population (1960 census)
Small-town - below 5,000 population

reported as farm owner, skilled worker, clerical, sales, manager, official, proprietor, professional or technical for a given school is highly related to many important school outcomes. This might well replace housing as the basis for the final split in forming categories.

Eventually, this final split might be made on the basis of the school's average score on a test such as Abstract Reasoning which seems to be quite independent of the school curriculum. Its use would lead to forming much the same groups as the use of father's occupation since they are highly related.

One measure of the utility of the school category grouping is the extent to which the schools within a given category tend to be similar in aptitude. This can be seen from Figure 4-5. Here, for each of the 17 major categories the grade 12 Abstract Reasoning Test median (50th percentile) is shown for the schools in each group along with the 10th, 25th, 75th, and 90th percentile. It can be seen that the Abstract Reasoning Test (a measure of non-verbal reasoning) levels of the various groups vary markedly.

Figure 4-6 shows the grade 12 English achievement test total score medians for the large (over 100 graduates) and small (less than 100 graduates) schools within each of the 17 groups. It can be seen that there is little consistent relationship here between school size and English achievement. The same has been found for such Project Talent tests as Mathematics achievement, Reading Comprehension, and Physical and Biological Sciences Information. One interesting aspect here is that most groups are predominantly either large or small. Results similar to Table 4-6 are obtained if schools with more or fewer than 25 graduates are compared.

Frequency Distributions by School Classification Group and Size Category

Table 4-6 contains frequency distributions of Grade 12 Abstract Reasoning (R-290) school means arranged for each of the 17 major groups of schools by four size categories of school. It can be seen that most of the groups of schools tend to be homogeneous in size. Usually most of the schools in a group fall in only two of the four size categories. In the large cities (Groups 21, 22, 31, 32) a pronounced tendency can be seen for the schools with higher Abstract Reasoning mean scores to be larger both within and between the two housing quality groups in Cities A and B.

Tables 4-7 and 4-8 show similar data for school means on English Total (R230) and Mathematics Total (R-340).

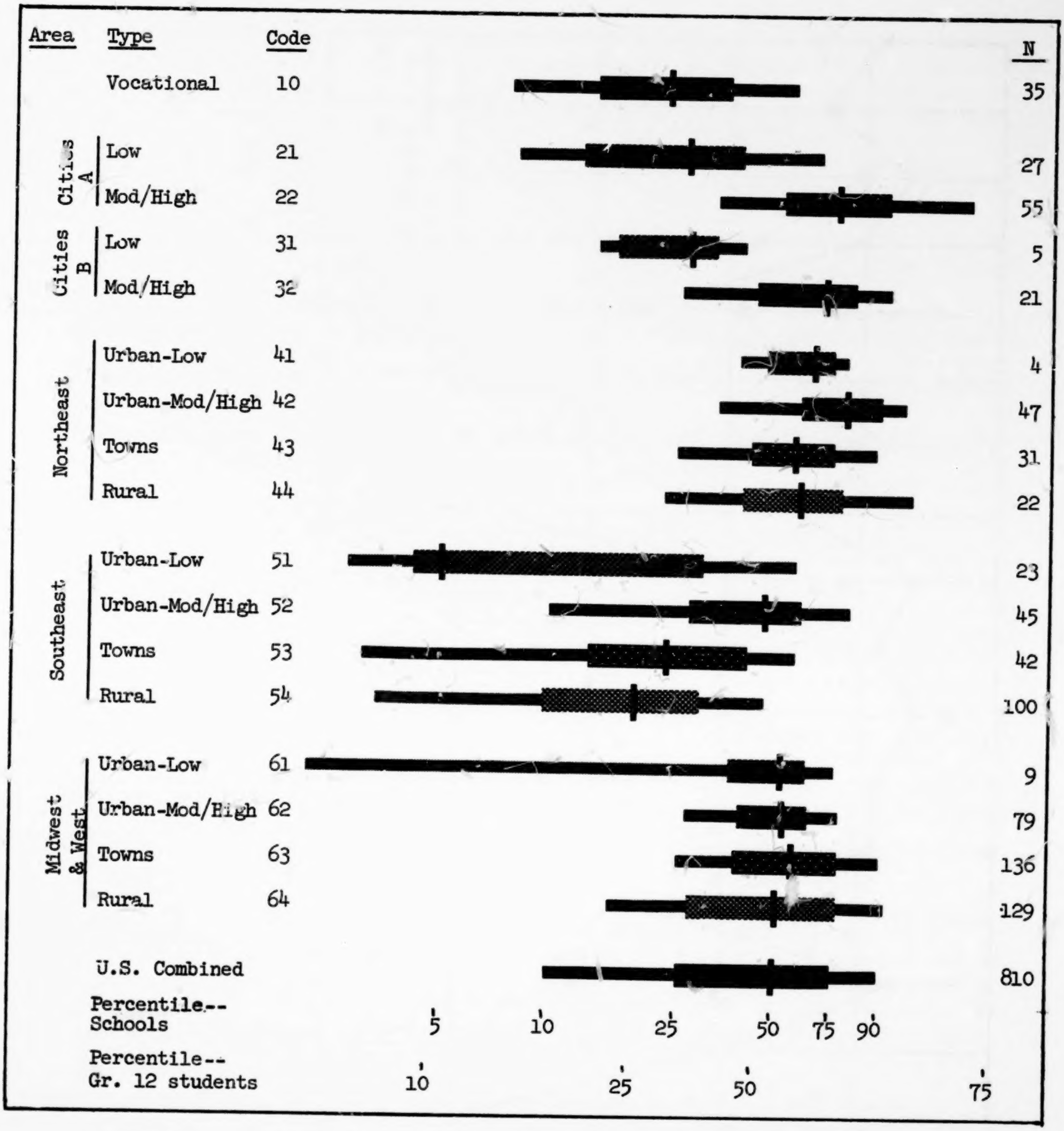
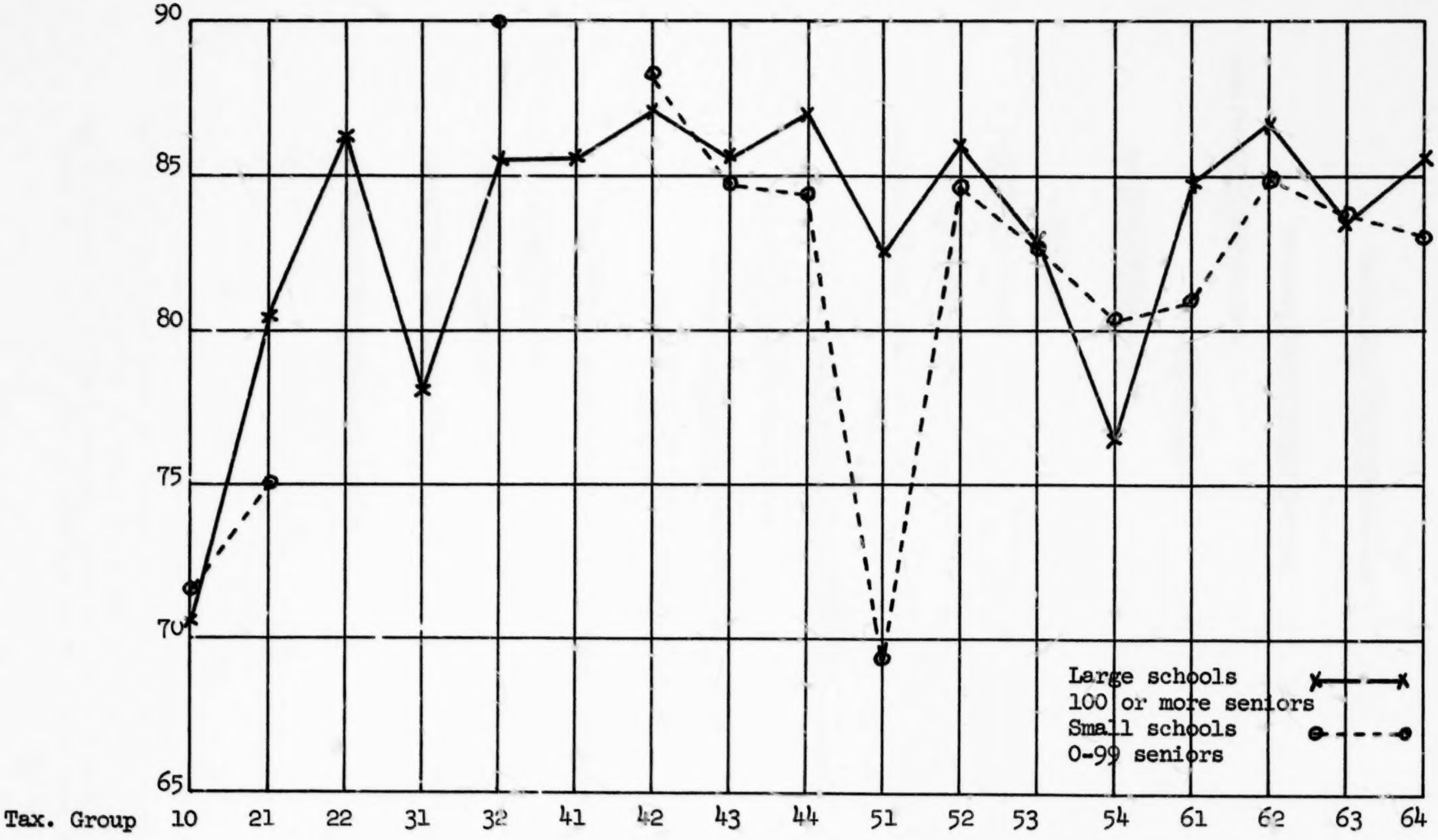


Figure 4-5. Frequency distribution of schools in each taxonomy group on mean scores of 12th grade students on Abstract Reasoning Test (R-290). Narrow bars indicate 10th to 90th percentile, wide bars 25th to 75th percentile, and vertical line 50th percentile.



Tax. Group	10	21	22	31	32	41	42	43	44	51	52	53	54	61	62	63	64
Large schools N =	26	26	54	5	18	4	34	4	2	4	24	7	2	3	54	9	4
Small schools N =	8	1	-	-	3	-	13	27	20	19	21	35	97	6	27	127	126

Figure 4-6. Plot of school medians for English Total (R-230) score means for 12th Grade for large and small schools for 17 classification groups.

Table 4-6

Frequency Distributions for Abstract Reasoning (R-290) School Means for 12th Grade Arranged for Each of 17 Classification Groups* by Size of School**

Mean Score	Group 10				Group 21			Group 22		Group 31		Group 32			Group 42			Group 43			Group 44		
	I	II	III	IV	II	III	IV	III	IV	III	IV	II	III	IV	II	III	IV	I	II	III	I	II	III
12.5-13.0									1														
12.0-12.5									2														
11.5-12.0									2														
11.0-11.5									1						1								
10.5-11.0							1		4					1	0	4			1	1	1	1	1
10.0-10.5							2	2	10				2	2	6	9		1	1			1	
9.5-10.0		1					2	2	10			2	2	3	3	8	2	1	7			5	
9.0- 9.5	1		5			1	2	3	8				1	2	2	6	1	1	7	2	1	6	
8.5- 9.0		2				1	6	1	3		1		3		1	4			3	1		1	
8.0- 8.5		3	3	1		1	3	1	3	2		1						1	1			2	
7.5- 8.0			6			1		0		2									2			2	1
7.0- 7.5		1	4			2		1															
6.5- 7.0			2	1		4		0															
6.0- 6.5			2		1									1									
5.5- 6.0			1										1						1				
5.0- 5.5			2						1														
4.5- 5.0																							
4.0- 4.5																							
3.5- 4.0																							
3.0- 3.5																							
2.5- 3.0																							
2.0- 2.5																							
1.0- 1.5																							
N	1	7	25	2	1	10	16	10	45	4	1	3	9	9	13	31	3	4	23	4	2	18	2
Mean	9.2	8.5	7.6	6.5	6.0	7.6	9.2	8.6	9.6	8.0	8.8	9.2	9.0	9.5	9.9	9.8	9.6	9.4	9.1	9.5	10.0	9.2	9.3

* In column headings, Arabic numerals designate classification groups and Roman numerals designate school size categories (I-IV).

** Size I: 0-24 in graduating class; Size II: 25-99 in graduating class; Size III: 100-399 in graduating class; Size IV: 400 or more in graduating class.

Table 4-6 continued

Frequency Distributions for Abstract Reasoning (R-290) School Means for 12th Grade for Each of 17 Classification Groups* by Size of School**

Mean Score	Group 41	Group 51			Group 52			Group 53			Group 54			Group 61			Group 62			Group 63			Group 64		
	III	I	II	III	II	III	IV	I	II	III	I	II	III	I	II	III	II	III	IV	I	II	III	I	II	III
12.5-13.0																									
12.0-12.5																							1		
11.5-12.0																							1		
11.0-11.5																							2		
10.5-11.0																		2		2	3		3		
10.0-10.5			1			3	1					3					2	12	3	7	12	1	5	13	2
9.5-10.0	2		1		1	4			2			2				2	9	19	4	3	23	1	5	9	1
9.0- 9.5	1			1	7	5	1		7		3	2			3	1	7	5	3	4	30	4	14	14	1
8.5- 9.0	1	1	1		5	4		1	2	1	2	5			1		4	2	1	1	16	2	3	11	
8.0- 8.5			1	1	1	3			4	2	4	15					3	2		3	11	1	8	10	
7.5- 8.0					3	1		1	5	2	2	13									4		3	8	
7.0- 7.5								1	3	1	2	13								1	3		3	2	
6.5- 7.0				1		1	1		1		5	3	2										1	2	
6.0- 6.5			1						2		1	5								1			2		
5.5- 6.0			1								1	1									1		1		
5.0- 5.5			8	1					1		1	2		1			1								
4.5- 5.0			1		2			1	1		1	4								1					
4.0- 4.5			3		1			1	2		2	2								1			1		
3.5- 4.0					1						2	1		1									1		
3.0- 3.5											1												1		
2.5- 3.0																									
2.0- 2.5										1															
1.0- 1.5																									
N	4	1	18	4	21	21	3	5	30	7	27	71	2	2	4	3	26	42	11	24	103	9	56	69	4
Mean	9.4	8.8	6.0	7.4	8.0	9.0	8.8	6.6	7.8	7.2	6.8	7.5	6.8	4.5	9.1	9.6	9.2	9.8	9.6	9.0	9.2	9.2	8.6	9.0	9.9

* In column headings, Arabic numerals designate classification groups and Roman numerals designate school size categories (I-IV).

** Size I: 0-24 in graduating class: Size II: 25-99 in graduating class: Size III: 100-399 in graduating class: Size IV: 400 or more in graduating class.

Table 4-7

Frequency Distributions for English Total (R-230) School Means for 12th Grade Arranged for Each of 17 Classification Groups* by Size of School**

Mean Score	Group 10				Group 21			Group 22		Group 31		Group 32			Group 42			Group 43			Group 44		
	I	II	III	IV	II	III	IV	III	IV	III	IV	II	III	IV	II	III	IV	I	II	III	I	II	III
98-100									1														
95-97									1														
92-94						1			3			1	1	2		1			1	1	1		1
89-91							2	2	8			1	1	1	6	8	1	1	2			2	
86-88							1	4	12				3	1	6	15		1	7	1		5	
83-85			1				4		14	1			1	3	1	5	1		8	1		7	
80-82						3	4		4	1		1	2	1		2		2	2	1	1	2	1
77-79		1	3	1		1	3	3	1	1							1		2			1	
74-76		1	2	1	1	1	1	1		1	1											1	
71-73	1	2	5			2	1						1	1					1				
68-70		2	4																				
65-67			6			2																	
62-64																							
59-61			2																				
56-58			1																				
53-55																							
50-52		1																					
N	1	7	25	2	1	10	16	10	45	4	1	3	9	9	13	31	3	4	23	4	2	18	2
Mean	72.0	69.4	69.9	76.5	75.0	76.5	81.8	83.7	86.7	79.5	75.0	87.3	84.7	85.3	88.2	87.1	84.0	84.8	84.6	86.3	87.0	84.3	87.0

* In column headings, Arabic numerals designate classification groups and Roman numerals designate school size categories (I-IV).

** Size I. 0-24 in graduating class; Size II: 25-99 in graduating class; Size III: 100-399 in graduating class; Size IV: 400 or more in graduating class.

Table 4-7 continued

Frequency Distributions for English Total (R-230) School Means for 12th Grade
Arranged for Each of 17 Classification Groups* by Size of School**

Mean	Group 41	Group 51			Group 52			Group 53			Group 54			Group 61			Group 62			Group 63			Group 64		
Score	III	I	II	III	II	III	IV	I	II	III	I	II	III	I	II	III	II	III	IV	I	II	III	I	II	III
98-100																							1		
95-97																									
92-94					1							1						1		2	1		3	1	
89-91			2		1	6	1		2			1			1		4	14	2		9		4	4	
86-88	2		1	1	7	5	1		9		5	7			1	1	7	14	3	3	27	2	9	10	2
83-85	1	1		1	5	6		1	6	4	5	17				2	12	11	5	7	29	4	13	24	1
80-82	1		1		3	3		2	4	1	2	14			2		3	3	1	7	20	3	9	17	1
77-79			1	1				1	3		4	12	1							1	12		5	9	
74-76							1				2	3	1								4		7	3	
71-73			2		1	1			1	1		4		1						1	1		2	1	
68-70			4						2		5	3								2					
65-67			3	1	1				1	1	1	4													
62-64			2								1	4					1						1		
59-61			1		2				1																
56-58								1	1														1		
53-55											1			1						1			1		
50-52			1																				1		
47-49											1														
N	4	1	19	4	21	21	3	5	30	7	27	72	2	3	4	3	27	45	11	24	105	9	57	71	4
Mean	85.5	84.0	71.3	78.8	81.6	85.4	84.0	76.2	80.6	79.3	76.1	78.9	76.5	63.0	84.8	83.0	84.6	86.9	85.6	81.0	83.6	83.7	81.2	82.5	84.8

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* In column headings, Arabic numerals designate classification groups and Roman numerals designate school size categories (I-IV).

** Size I: 0-24 in graduating class; Size II: 25-99 in graduating class; Size III: 100-399 in graduating class; Size IV: 400 or more in graduating class.

Table 4-8

Distribution of Public Senior High Schools by Grade 12 School Means for Mathematics Total (R-340) by 17 Taxonomy Groups

Mean Score	Taxonomy Group																	
	10	21	22	31	32	41	42	43	44	51	52	53	54	61	62	63	64	Total
46-54																		
43-45			2															2
40-42			1															1
37-39																		
34-36			1						1									2
31-33		1	3		2		5		1								2	14
28-30		1	5		3		5	6			2				5	2	5	34
25-27	1	2	20		4	1	15	6	7	2	9	4	4	1	30	31	21	158
22-24	1	2	11		5	2	14	9	6	3	15	8	14	5	34	49	42	220
19-21	5	11	8	3	5	1	7	6	5	2	9	15	22	1	7	42	39	188
16-18	10	4	2	2				3	1	1	3	7	32			9	13	87
13-15	8	5	1		2			1		4	3	3	12	1	1	3	3	47
10-12	9	1					1		1	10	2	4	11	1	3		4	47
7- 9	1									1		1	2					5
4- 6											1		1					2
N =	35	27	54	5	21	4	47	31	22	23	44	42	98	9	80	136	129	807
Mean=	15.4	19.6	25.7	18.8	23.7	23.0	24.9	23.3	23.4	15.3	21.3	19.1	17.6	20.7	23.8	22.2	21.8	21.4

Case Studies

Each of the following is a case study of a typical school in each taxonomy group, selected as an example of the schools in the group.

A Typical Vocational High School - Group 10

This vocational school includes grades 9 through 12. It is accredited by the state and has an average instructional class size in science and math of about 34. The average size in other classes is about 28. The students are assigned between one and two hours of homework per day. There are abour 354 seniors in the school. The annual starting salary for secondary teachers with a Bachelor's degree and no experience is between $4,500 and $5,000. The school is staffed with experienced teachers. A high proportion of these teachers hold advanced degrees. They are virtually all fully certified by the state and teaching in their major area of preparation. About 45% of the teachers are men. During the past year there was an extremely low rate of turnover — only one or two teachers left, and had to be replaced. The per-pupil expenditure rate during last year was nearly $900.

The average achievement level in this school is extremely low. The factors mentioned in the preceding paragraph are about the same in the highest achievement school in the school system as it is in the system's lowest achievement school. However, when one looks at the course offerings of the school one finds a tremendous difference in pattern between it and the high achievement schools in the same system. In this particular school, physics is not taught. French is the only language taught, and there is no fourth year course in any foreign language. In mathematics there are course offerings in elementary and intermediate algebra, general mathematics, plane geometry, and remedial mathematics only. Of course the school is also distinguished from high achievement schools because it is in a low income area. The analysis of this school points up the probable generalization that nearly all of the characteristics included in the school questionnaire are just as likely to be found to a given degree in both the best schools and the worst schools.

Vocational education is extremely expensive as compared to general education. If a school system maximizes its emphasis on vocational education an increase in the average class size and a decrease in teachers' salaries is necessary in order to compensate for this emphasis. The "proof of the pudding" here, however, is whether the vocational education works. Does it achieve its objective of maximizing the employability of the non-college oriented student? This information should result from the follow-up study. Does the student trained in a specific occupation get along better occupationally in the long run than the student who is given a general education? Particularly, how does it affect the low academic ability student who is placed in the vocational high school? At the present time many poor students who are just barely able to read are placed in vocational training courses that give very little emphasis to reading and basic skills. It is probable that a large proportion of these students do not end up with skills that make them attractive to employers; consequently such people will be handicapped occupationally because of their low literacy and low basic skill level. It is possible that placing such students in a general curriculum and raising their basic literacy slightly might do more to maximize their employability than putting them in a specific very narrow, very low level occupational training program. It is possible that using vocational high schools for poor learners and intractable students may be largely destroying the effectiveness of the vocational high school. It probably costs just as much for the student in the vocational high school who is "dumped" there as it does for the specially oriented student with special talent and motivation who is in the process of acquiring a high level of occupational skill. It might, perhaps, be better in the long run to place in the vocational training programs only trainable students and leave the marginally trainable students in a basic curriculum whose primary objective is to increase the effective literacy and basic skill level of such students to the point that they will be more acceptable to employers for employer training programs.

A Typical Large City, High Quality Housing Area High School - Group 22

This school is accredited both regionally and by the state. There is little difference in many of the characteristics of this school and the first one except that this one has about 34 students in each class in science and math and the same number in other courses. Thus it is a little more crowded. This school assigns approximately twice as much homework as the other school, averaging between three and four hours of homework per day. The school plant is a little older than the first school and has been renovated somewhat more recently. There is little apparent difference among the staff of the two schools there being slightly more turnover in the second school but the turnover is very low. There seems little difference in the advanced degrees of the two facilities and practically all of the second school are fully certified and teaching in their major area of preparation. The starting salary is the same in both schools.

The second school is greatly different from the first school in that about 75% of its students are in a college preparatory curriculum. And a high percentage of the students go on to college. This school is somewhat larger than the first school and has 1761 seniors. Its total enrollment is 6153. The curriculum includes four years of Spanish, four years of Latin, four years of French, four years of German, three years of Hebrew, and two years of Greek. Physics is taught, as is biology, zoology, earth science, physical geography, chemistry, applied chemistry, and advanced chemistry. In the mathematics curriculum there is elementary algebra, intermediate algebra, general mathematics, plane geometry, solid geometry, trigonometry, advanced or college algebra, remedial arithmetic, analytical geometry, and calculus. The school serves an urban residential area. It can be seen here that the first school is spending more money per student under less crowded conditions and yet the results are extremely low. It is apparent that the main difference between the two schools is in terms of the types of students they serve.

A Typical Western Rural High School - Group 64

This school has seven seniors out of a total enrollment of thirty in grades 9, 10, 11, and 12. It includes grades 1 through 12 and is accredited by the state. It has 175 days in its school year and has four periods of 45 minutes each. Its average class size in science and math is about thirteen and is about sixteen in other subjects. Students are given about an hour and a half of homework per day. They have nine or more study hall periods a week. There are between three and six hundred books in the library. The school building is about 42 years old and has been renovated within the past three years. The school has a newspaper and also an annual. It has an orchestra or band. There are about four teachers in the school, all of them are men. All of the teaching staff is fully certified by the state but only about 35% of them are spending more than half of their teaching time teaching in their major area of preparation. The annual starting salary for male teachers with a Bachelor's degree and no experience is between $4500 and $5000. The teachers average about ten years' experience. About 55% of the boys entered college last year and about 35% of the girls. The per-pupil expenditure during last year was $360. The school serves a rural area where the residences are described by the principal as primarily moderate priced homes. The science curriculum covers 9th grade general science, biology, physical geography, chemistry and physics. The mathematics curriculum covers elementary algebra, intermediate algebra, plane geometry, solid geometry, trigonometry, and advanced or college algebra. There is no foreign language taught. The general level of achievement is very high in this school and compares favorably with that of some of the best large city schools. The average Abstract Reasoning test level of the students is also very high.

A Typical Southeastern Rural High School - Group 54

This school is in the southeastern part of the country and has no students from minority groups. It has 12 seniors and an enrollment of 78 students. It serves a rural area of low cost homes and has a low retention rate. Grades 1 through 12 are included in the school. It is accredited by the state. It is open 180 days a year and has seven periods of about 45 minutes each. The average class size is about 22 and about an hour-and-a-half per day of homework is assigned. There are about a thousand books in its library. The school plant is about seventeen years old and has been renovated within three years. The starting salary for a male secondary teacher with Bachelor's degree and no experience is between $2,500 and $3,000. The school staff averages fifteen years or more of experience. The average per-pupil expenditure was $230 per year. The science curriculum included only 9th grade general science, biology, and a survey course in earth science. Mathematics covered only elementary algebra, general mathematics, and remedial arithmetic. No foreign language was taught. One can see a very great difference in the curriculum offered by these two small rural schools. This one has a very low achievement level and a very low Abstract Reasoning test level.

A Typical West Urban High Quality Housing Area High School - Group 62

This school has an enrollment of 600 in the four high school grades. The school includes grades 1 through 12. It is regionally accredited. There are 184 days in the school year and the school day consists of six class periods of 55 minutes or more each. The average class size in science and mathematics is 25 and is 31 in other courses. Students are given about two to three hours of homework per day. They have five study halls per week. The building is over 45 years old but has been renovated within less than three years. The school has a school newspaper and annual, an orchestra or band, glee club, national honorary society, drama, plays, dances, and both inter-school athletics and intra-mural athletics. Annual starting salary in the school with teachers having a Bachelor's degree and no experience is between $4,000 and $4,500 per year. The teachers average more than 15 years of experience. About 45% of the boys last year graduated and went on to college, and about 35% of the girls. The residences in the area served by the school are best described as primarily moderate priced homes, and it is an urban residential area. The per-pupil expenditure for the past year was $325. The science curriculum includes biology, advanced general science, physical science, chemistry, physics, and advanced biology. Mathematics curriculum includes elementary algebra, intermediate algebra, general mathematics, plane geometry, solid geometry, and trigonometry. The curriculum also includes three years of Spanish and two years of Latin. The general achievement level of this school is about average.

A Typical Southeast Low Quality Housing Area High School - Group 51

This school has 162 seniors and an enrollment of 446 students in grades 9 through 12. It includes grades seven through twelve and is both regionally and state accredited. There are five class periods a day of 55 minutes or more each. The average class size in science and mathematics is 25 and is also 25 for other classes. Between one and two hours of homework are assigned per day and there are five study halls per week. The school is about six or seven years old and has been renovated within less than three years. It has over 2700 books in its library. The school has a school newspaper, inter-school athletics, intra-mural athletics, orchestra or band, glee club, subject matter clubs, hobby club, drama and plays, dances, and military cadets. There are four or more tracks in the school. There are about 25 teachers and very low turnover rate. About 22 of the teachers have Bachelor's degrees and about four have Master's degrees. All are fully certified by the state and over 90% are teaching in their major area of preparation. The annual starting salary for male teachers with a Bachelor's degree and no experience is between $3,500 and $4,000. During the last year, about 5% of the boys went on to college and about the same number of the girls. The residences in the area served by the school are best described as primarily low cost homes. The school serves an entire geographical area. The per-pupil expenditure in the last year was $268. The student body is 100% negro.

The science curriculum covers general science, biology, chemistry, and physics. The mathematics curriculum includes elementary algebra, intermediate algebra, general mathematics, plane geometry, advanced or college algebra, and advanced general mathematics. Two years of French are taught. The general level of both aptitude and achievement is very low.

A Typical Moderate Size City High Quality Housing Area High School - Group 32

This school has 169 seniors and 871 students in grades 9 through 12. It includes grades seven through twelve, and is regionally and state accredited. There are 178 days in the school year, and there are eight class periods a day of about 40 minutes each. The average class size in science and mathematics is 28; the same as for other classes. There are between one and two hours of homework assigned per day and two study hall periods per week. There are over 2700 books in the library. The school building is about 32 years old and has been renovated within the last three years. The school has a student newspaper, school magazine, inter-school athletics, intra-mural athletics, orchestra or band, glee club, national honorary society, subject matter clubs, drama, plays, and service clubs. A substantial proportion of the teaching staff has Master's degrees. Over 90% are fully certified by the state and over 90% are teaching in their major area of preparation. The annual starting salary for a male teacher with a Bachelor's degree and no experience is between $4,000 and $4,500. The average amount of full-time teaching experience among the faculty is about ten years. There is a very low dropout rate and about 65% of the boys go to college and about 35% of the girls. The residences in the area served by the school are described by the principal as moderately priced homes in a suburban residential area. The per-pupil expenditure is $467 per year. The science curriculum includes general science and biology. The mathematics curriculum includes elementary algebra, intermediate algebra, general mathematics, plane geometry, solid geometry, and trigonometry. Two years of Spanish, 3 years of Latin, and 2 years of French are taught. The general level of aptitude and achievement is moderately high but not extremely high.

Extensive Use of School Classification System Anticipated

This school classification system will be used in the Project Talent studies of the relationship of school characteristics and the school outcomes, and also school census data will be reported separately for each of the groups of schools. In this way the research results can be of maximum value to each of the individual schools.

References

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Chapter 5

THE STATISTICAL CHARACTERISTICS OF SCHOOL MEANS

One technique that has proved particularly revealing in studying school data has been to investigate correlation matrices in which the variables are school means.

Many of these correlations will be presented and discussed in subsequent chapters. The first thing the reader will probably notice when he looks at these correlation coefficients is that many of them are far higher than the corresponding correlations for individual students--in some cases startlingly high,as a matter of fact. For instance the correlation between English Total and Mathematics Total, which is only .630 for Grade 10 students, is .884 for Grade 10 school means.

The discrepancy between these two correlation coefficients is due to a very complex combination of circumstances. A correlation between means is not necessarily higher than the corresponding correlation between students, but, as has already been noted, in the situation we are talking about here, where the groups on which the means are based are all the students in a particular grade in a particular school, they usually are higher. The basic reason for this is that schools are not random groups. If they were, the correlations between school means would be approximately equal to the corresponding correlations between individual scores. This is a fact well known to statisticians. Kelley, for instance, points out that, "If in an experimental situation.../the correlation between means and the correlation between individual scores/ can be calculated independently and when so calculated are found to be different, it is established that the successive samples have not been random samples from the same population."* In that statement lies the crux of the situation. In Project Talent, however, the importance of the discrepancy between correlations of means and correlations of individual scores is not in the mere fact that it tells us that the student body of a school is not a random sample of students all over the country and does not behave like one. That is something that anyone with the barest modicum of information about our schools could not fail to know. The real importance of the discrepancies lies in the fact that careful study of them can help provide considerable insight into the nature of the non-randomness.

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* Kelley, T. L., Fundamental of Statistics , Harvard University Press, Cambridge, Massachusetts, 1947, pp. 548-549.

Before discussing this matter further, let us consider briefly the various statistical factors that affect correlations of means. For this purpose the following notations will be used:

A and B are the two variables correlated

N = number of cases in total sample (e.g., number of Grade 10 students in Project Talent)

m = number of groups into which these N cases are divided (e.g., number of senior high schools in Project Talent sample)

n_i = number of cases in sample in group i (e.g., number of cases tested in i^{th} school)

n = average $n_i = \frac{N}{m}$

n'_i = number of cases in the sub-population represented by Group i. For instance, n'_i might represent the number of students enrolled in the i^{th} school (as distinguished from n_i, the number of such students included in the sample tested). In the case of most Project Talent schools, $n'_i = N_i$

$$n' = \text{average } n'_i = \frac{\sum_{i=1}^{m} n'_i}{m}$$

r_{AB} = correlation of students' scores on A and B

$r_{\bar{A}\bar{B}}$ = correlation of school means on A and B (with each school appropriately weighted in accordance with its size)

r_{ab} = correlation of A and B within schools (with the contribution of each school appropriately weighted)

σ_A and σ_B are the standard deviations of students' scores

$\sigma_{\bar{A}}$ and $\sigma_{\bar{B}}$ are the standard deviations among school means as estimated from the scores of the students tested (with each school appropriately weighted)

σ_a and σ_b are the standard deviations of the discrepancies between students' scores and corresponding school means. In other words σ_a and σ_b are the standard deviations within schools, with the contribution of each school appropriately weighted.

σ_α and σ_β are the standard deviations of parameter values of the school means (as opposed to estimates such as $\sigma_{\bar{A}}$ and $\sigma_{\bar{B}}$, based on samples of the students in the school). It should be noted that σ_α and σ_β differ from $\sigma_{\bar{A}}$ and $\sigma_{\bar{B}}$ only to the extent that not all the students in the school were tested. (In New York City, for instance, only one out of twelve students was tested.) If all students in all the schools selected for the sample had been tested, σ_α and σ_β would have been identical with $\sigma_{\bar{A}}$ and $\sigma_{\bar{B}}$ throughout the study.

r_{AA} and r_{BB} are the reliability coefficients for students' scores

$r_{\bar{A}\bar{A}}$ and $r_{\bar{B}\bar{B}}$ are the reliability coefficients for school means

In all instances the values represented by the above notation are parameter values, or else unbiased estimates of them, based on sample values. Standard deviations of samples (not corrected for bias) are represented by s instead of σ.

Formulas have been derived* to clarify the interrelationships among the various statistical factors shown above in determining reliability of group means and intercorrelations among these means. In advance of presenting these formulas it seems advisable to give a preview of the parametric values affecting the correlations, at this point.

The factors that directly affect the value of r_{AB} (the correlation between means) are, in terms of the above notation, the following:

n
$n'-n$
m
r_{AB}
r_{ab}
σ_α / σ_A and σ_β / σ_B
σ_a / σ_A and σ_b / σ_B

---

* These formulas, which are presented on pages 5-4 to 5-10 were developed by the author of this chapter. The derivations are presented in the separately bound Technical Appendix.

Indirectly, the magnitude of $r_{\bar{A}\bar{B}}$ is also affected by the magnitude of $r_{\bar{A}\bar{A}}$ and $r_{\bar{B}\bar{B}}$, since the square root of their product constitutes an upper limit on $r_{\bar{A}\bar{B}}$. And as will be shown, provided the trifling assumption is made that the students in a school represent a hypothetical infinite population of such students (i.e., n' is infinite), the reliability coefficients for school means (e.g., $r_{\bar{A}\bar{A}}$) are in turn determined by:

n

r_{AA}

$\sigma_{\alpha} / \sigma_{A}$

σ_{a} / σ_{A}

These factors, it will be noted, are mutually independent. (If n' is not assumed to be infinite, it, too, enters the picture.)

It is because of the indirect role of the reliability coefficients in setting an upper limit on the intercorrelations, that in presenting the formulas attention will be focused first on the ones for reliability.

The general formula for reliability of a mean is

$$r_{\bar{A}\bar{A}} = 1 - \frac{\sigma_{A}^{2}}{n\sigma_{\bar{A}}^{2}}\left(1 - r_{AA}\right) \qquad (1)$$

When the groups tested represent finite sub-populations (i.e., when n' is finite) the formula becomes

$$r_{\bar{A}\bar{A}} = 1 - \frac{1 - r_{AA}}{n\left(\frac{\sigma_{\alpha}}{\sigma_{A}}\right)^{2} + \frac{n' - n}{n' - 1}\left(\frac{\sigma_{a}}{\sigma_{A}}\right)^{2}} \qquad (2)$$

When $n' = n$ (e.g., when all the students in the school are tested), Formula 2 becomes

$$r_{\bar{A}\bar{A}} = 1 - \frac{1 - r_{AA}}{n\left(\frac{\sigma_\alpha}{\sigma_A}\right)^2} \tag{3}$$

When n' is regarded as infinite, Formula 1 becomes

$$r_{\bar{A}\bar{A}} = 1 - \frac{1 - r_{AA}}{n\left(\frac{\sigma_\alpha}{\sigma_A}\right)^2 + \left(\frac{\sigma_a}{\sigma_A}\right)^2} \tag{4}$$

Examination of Formula 4 reveals clearly that when n' is regarded as infinite, the large $r_{\bar{A}\bar{A}}$ values are produced by

Large r_{AA}

Large n

Large σ_α / σ_A

Large σ_a / σ_A

And examination of Formula 3 reveals that when n' is finite and equal to n (i.e., when all the students in the school are tested), σ_a / σ_A (i.e., the standard deviation within schools, relative to the total standard deviation) drops out of the picture as an explanatory factor.

Formula 3, incidentally, has nearly complete applicability to the Project Talent situation. The only qualifying consideration is the fact that in the New York and Chicago schools that were in the sample, only a fraction of the students were tested.* Formula 2 allows for this. And Formula 1, as already stated, is a general formula, applicable irrespective of the proportion of students tested within schools. Formula 1 has the additional merit of being usable as a computational formula, a feature which Formulas 2 and 4 lack since σ_α is a theoretical value that cannot be determined operationally.

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* Details concerning the procedure in New York and Chicago are described in Monograph No. 1 of this series, pp. III 12-13.

Reliabilities of school means for Grade 10 have been computed for selected tests, using Formula 1. These reliability coefficients, together with the corresponding reliability coefficients for individuals, are shown in Table 5-1.*

The reliability coefficients for means are in the last column of the table.** It will be noted that all but one of these reliability coefficients are above .990 and that one of them is as high as .999. Reliability coefficients as high as these indicate that the school means are almost entirely free of measurement error, i.e., error in determining the relative position of the mean of a particular school, in relation to the other schools in the sample.

This reduction of measurement error almost to the vanishing point is achieved by having groups (e.g., schools) for which the means differ widely, and in conjunction with this, by having a large n (i.e., a large number of students per school). In this connection, it is important to recognize that a large n (i.e., a large number of cases per group) would result in no increase whatever in reliability if the groups were merely random subsamples of the total group. Only if group means show more variability (among themselves) than would be expected from random samples does size of group contribute towards making group means more reliable than individual scores. Inspection of Formula 1 makes this very clear. When the groups are random samples, $\sigma^2_{\bar{A}}$ varies inversely with n. As n becomes larger, $\sigma^2_{\bar{A}}$ becomes correspondingly smaller, so that the product $n\sigma^2_{\bar{A}}$ remains constant, and $r_{\bar{A}\bar{A}}$ is unaffected.

Furthermore, having a large n is not merely a matter of reducing the sampling error of the individual school means. This is clear from Formula 3, which represents a situation in which sampling error of

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* The reader who studies this table carefully may be surprised to observe that the average number of Grade 10 boys per school (54.6 boys) plus the average number of Grade 10 girls per school (55.2 girls) does not equal the average number of Grade 10 students per school (109.4 students). This is not an error. It is due to the fact that not all the schools are coeducational.

** Because the exact values needed for application of Formula 1 were not available, it was necessary to use some approximation in the computation. (The nature of these approximations is described in the 4th footnote of the table.) The resultant values of $r_{\bar{X}\bar{X}}$, thus, are not exact. However, it seems probable that they are close to the values that would have been obtained for $r_{\bar{X}\bar{X}}$ had precise values been available for n, σ_X, $\sigma_{\bar{X}}$, and r_{XX}.

Table 5-1 Means, Standard Deviations, and Reliability Coefficients for Selected Project TALENT Tests For Individual Students (Grade 10) and for Public Senior High School Means (Grade 10)

				Data for indiv. students*				Data for public senior high school means				
		t	Sex	N	$\bar{X}$	σ_x	r_{xx}**	m (Approx.)	n (Est.)	$\bar{X}'$	$\sigma'_{\bar{X}}$	$r_{\bar{X}\bar{X}}$****
R-190	Info. I Total	252	M	3846	132.63	37.76	.960	19045	54.6	122.60	22.35	.998
			F	3727	117.80	31.82	.942	18949	55.2	112.45	18.48	.997
			Tot.	7573	125.33	35.74	.954	19078	109.4	117.51	19.80	.999
R-230	English Total	113	"	7573	79.36	13.96	.887	19078	109.4	76.54	7.43	.996
R-250	Reading Comp.	48	"	7573	28.13	10.68	.843***	19078	109.4	25.85	5.29	.994
R-260	Creativity	20	"	7573	8.14	3.84	.708	19078	109.4	7.60	1.64	.985
R-340	Math Total	54	"	7573	20.69	8.25	.828	19078	109.4	19.02	3.61	.992

* Based on a 10% subsample (Subsample 0)

** Kuder-Richardson Formula 21 was used (except where otherwise indicated). Ref: Kuder, G. H. and Richardson, M. W., "Theory of Test Reliability," Psychometrika, Vol. 2, No. 3, September 1937.

*** Derived from experimental form split-half reliability (based on 2628 students in Grades 9-10); as adjusted (by Spearman-Brown Formula) for the number of items in the final form and corrected for range.

**** Formula:

$$r_{\bar{X}\bar{X}} = 1 - \frac{\sigma_x^2}{n\sigma_{\bar{X}}^2}\left(1 - r_{xx}\right)$$

The $r_{\bar{X}\bar{X}}$ values obtained are only approximations, because:

(1) n is an estimate

(2) $\sigma'_{\bar{X}}$ was used instead of $\sigma_{\bar{X}}$

(3) r_{xx} and σ_x are based on all Grade 10 students in Subsample 0, instead of public school students only, in all subsamples

Notation

t = number of test items
N = number of students
m = number of public senior high schools (in population)
n = average number of students per public senior high school (Grade 10)

σ_x = s.d. of individual students' scores
$\bar{X}$ = mean of individual students' scores
= mean of school means } with each school weighted proportionally to number of students represented in population
$\sigma_{\bar{X}}$ = s.d. of school means }

$\bar{X}'$ = mean of school means } with each school weighted proportionally to number of schools it represents in population
$\sigma'_{\bar{X}}$ = s.d. of school means }

the means of the individual schools is non-existent, since all the students in the school are tested. It is apparent from the formula that even in this sampling-errorless situation, the larger n is, the larger $r_{\bar{A}\bar{A}}$ becomes.

Sampling error at best could have no more than a negligible effect on the reliability of means. This is obvious from the fact that when the reliability coefficients are already so high (mostly over .99) there is no room for any other sample to improve them except perhaps in the third decimal place. And the reason the reliability coefficients are already so high is not that almost all sampling error has already been removed. The values shown in Table 5-1 were obtained with n's in the vicinity of 50 or 100, and n's of this magnitude are by no means large enough to reduce the sampling error of means almost to zero. But they are large enough, apparently, to make the standard error of measurement of the mean very small, and when the standard error of measurement becomes small not merely in absolute terms but also relative to the standard deviation of the means, the reliability of the means goes up.

The reason the author of this chapter has seen fit to labor this matter at such length is that unless the reader understands the role of the various factors involved in making reliability coefficients and other correlation coefficients for means so high in comparison with the corresponding values for individuals, he will have difficulty in getting the right perspective to understand and correctly interpret the correlational data to be presented in subsequent chapters.

The general formula for correlation of means is

$$r_{\bar{A}\bar{B}} = \frac{r_{AB}s_A s_B - r_{ab}s_a s_b}{s_{\bar{A}}s_{\bar{B}}} \qquad (5)^*$$

Formulas 6, 7, 8, and 9, which follow, are non-computational formulas, presented primarily to show underlying relationships with particular reference to population parameters.

When the population is regarded as infinite Formula 5 becomes

$$r_{\bar{A}\bar{B}} = \frac{(N-1)\ r_{AB}\ \sigma_A\sigma_B - (N-m)\ r_{ab}\sigma_a\sigma_b}{(N-n)\ \sigma_{\bar{A}}\sigma_{\bar{B}}} \qquad (6)$$

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* In this formula, the r's represent sample values, not population values.

When the groups tested represent finite sub-populations (i.e., when n' is finite) the Formula becomes

$$r_{\bar{A}\bar{B}} = \frac{(N-1)\, r_{AB} - (N-m)\, r_{ab}\, \frac{\sigma_a}{\sigma_A}\, \frac{\sigma_b}{\sigma_B}}{(m-1)\sqrt{n\left(\frac{\sigma_\alpha}{\sigma_A}\right)^2 + \frac{n'-n}{n'-1}\left(\frac{\sigma_a}{\sigma_A}\right)^2}\;\sqrt{n\left(\frac{\sigma_\beta}{\sigma_B}\right)^2 + \frac{n'-n}{n'-1}\left(\frac{\sigma_b}{\sigma_B}\right)^2}} \qquad (7)$$

When n' = n (e.g., when all the students in the school are tested), Formula 7 becomes

$$r_{\bar{A}\bar{B}} = \frac{(N-1)\, r_{AB} - (N-m)\, r_{ab}\, \frac{\sigma_a}{\sigma_A}\, \frac{\sigma_b}{\sigma_B}}{(N-n)\, \frac{\sigma_\alpha}{\sigma_A}\, \frac{\sigma_\beta}{\sigma_B}} \qquad (8)$$

When n' is regarded as infinite, Formula 6 becomes

$$r_{\bar{A}\bar{B}} = \frac{(N-1)\, r_{AB} - (N-m)\, r_{ab}\, \frac{\sigma_\varepsilon}{\sigma_A}\, \frac{\sigma_b}{\sigma_B}}{(m-1)\sqrt{n\left(\frac{\sigma_\alpha}{\sigma_A}\right)^2 + \left(\frac{\sigma_a}{\sigma_A}\right)^2}\;\sqrt{n\left(\frac{\sigma_\beta}{\sigma_B}\right)^2 + \left(\frac{\sigma_b}{\sigma_B}\right)^2}} \qquad (9)$$

In the special situation where

$$\frac{s_a}{s_A} = \frac{s_b}{s_B}\,, \qquad (10)$$

Formula 5 simplifies to

$$r_{\bar{A}\bar{B}} = r_{AB} \left[1 + k^2 \left(1 - \frac{r_{ab}}{r_{AB}} \right) \right] \qquad (11)*$$

$$\text{where } k = \frac{s_a}{s_{\bar{A}}} = \frac{s_b}{s_{\bar{B}}}$$

Inspection of Formula 10 reveals that in this situation, at least, r_{AB} necessarily lies somewhere between $r_{\bar{A}\bar{B}}$ and r_{ab}. Thus if r_{ab} (the correlation within schools) is less than r_{AB}, $r_{\bar{A}\bar{B}}$ (the correlation of means) is greater than r_{AB}. Similarly if the within-schools correlation exceeds the correlation for the total group of students, the correlation of school means will be lower than the correlation for the total group.

To carry this analysis one step further, a proof appears in the Appendix that when

$$\frac{s_a}{s_A} \neq \frac{s_b}{s_B} \qquad (12)$$

it is mathematically possible for both $r_{\bar{A}\bar{B}}$ and r_{ab} to exceed r_{AB}, but it is impossible for them both to be less than r_{AB}. However it remains true that as r_{ab} goes down $r_{\bar{A}\bar{B}}$ goes up and vice versa. Thus in the situation where inquality 12 holds, as it usually does of course, the tendency is strengthened for $r_{\bar{A}\bar{B}}$ to exceed r_{AB}, and the greater the degree of inquality (between $\frac{s_a}{s_A}$ and $\frac{s_b}{s_B}$) the stronger the tendency. This means, in effect, that insofar as either the direct and indirect selection factors that help determine a school's student body, or the "treatment variables" that are operative, are more closely related to one of the two variables being correlated than to the other one, the probability is increased that the correlation of means will exceed the correlation for the total group of students. To carry this analysis to its logical conclusion when one of the variables correlated has maximal intra-school variance and minimal inter-school variance and the variance for the other variable is almost entirely variance among schools, the correlation between means is likely to be enormously increased.

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* In this formula, the r's represent sample values, not population values.

In order to facilitate comparison of correlation of means with correlation of individual scores, Table 5-2 presents corresponding coefficients of the two kinds, for selected tests, for Grade 10. Detailed discussion of the implications of specific coefficients in this table is postponed to subsequent chapters. The table is presented here chiefly to give the reader a more specific idea of how the two kinds of coefficients compare.

It is important to recognize that even correlations as high as some of those shown in Table 5-2 between means do not indicate absence of all unique variance. The reliability coefficients for the variables involved are so high (as Table 5-1 and the diagonal of Table 5-2 show) that there is still a substantial amount of reliable variance over and above that accounted for by the correlation with another variable. For instance, when two variables have a correlation of .90, each has fully 17% of its reliable variance unaccounted for by the correlation if the reliability coefficients are as high as .99*. A case in point is the correlation of .896 between school means for Information Total and English Total. With reliability coefficients of .999 and .996 respectively, about 20 per cent of the reliable variance of each of these variables is unaccounted for by the correlation.

Moreover, when correlations are as high as those shown in Table 5-2, they are very stable (i.e., their standard errors are very small) and therefore small differences among them are significant. Likewise, when reliability coefficients are as high as those shown in the last column of Table 5-1, the means, too, are extremely stable and very small differences among them are also significant.

Some of the factors that affect school outcomes are rather general; in other words, their effect is broadly pervasive, extending over several areas. An example of such a factor might be the general academic ability level of the students in the school. A school in a neighborhood where most of the students go to college will have brighter students, on the whole, than a school in a neighborhood where most of the students drop out before graduation. In the school with the brighter students this superiority will be manifested over a broad range of subjects. The average scores in this school will be higher than those in the other school, not just in one subject but over a broad range: English, Mathematics, Reading Comprehension, Abstract Reasoning, Physical Sciences Information, and Memory for Words, to name just a few. And these selection factors will have a substantial effect in inflating the school means.

Other factors that affect school outcomes are narrower and more specific--for instance, special emphasis on a particular area in the curriculum, such as science. Some factors of this sort, like the more obviously

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* Proportion of reliable variance unaccounted for = $1 - \frac{r^2_{AB}}{r_{AA} r_{BB}}$

Table 5-2 Intercorrelations Among Selected Project TALENT Tests For Individual Students (Grade 10, Subsample 0) and for Grade 10 Public Senior High School Means

		R-190: Info Total			R-230	R-250	R-260	R-340	$\bar{x}$	σ_{x}	N
		Boys	Girls	All	Eng.	Rdg.	Creat.	Math	$\bar{x}'$	$\sigma'_{\bar{x}}$	
R-190 Info I Total(Boys)	r_{AB}	.960	--	--	.718	.799	.663	.736	132.63	37.76	3846
	$r'_{\bar{A}\bar{B}}$	.998	.881	.975*	.889	.915	.865	.872	122.60	22.35	
R-190 Info I Total(Girls)	r_{AB}		.942	--	.702	.808	.621	.743	117.80	31.82	3727
	$r'_{\bar{A}\bar{B}}$		.997	.964*	.846	.879	.828	.867	112.45	18.48	
R-190 Info I Total	r_{AB}			.954	.626	.768	.646	.737	125.33	35.74	7573
	$r'_{\bar{A}\bar{B}}$			.999	.896	.926	.874	.896	117.51	19.80	
R-230 English Total	r_{AB}				.887	.702	.473	.630	79.36	13.96	7573
	$r'_{\bar{A}\bar{B}}$				.996	.917	.829	.884	76.54	7.43	
R-250 Reading Comprehension	r_{AB}					.843	.619	.667	28.13	10.68	7573
	$r'_{\bar{A}\bar{B}}$					.994	.904	.881	25.85	5.29	
R-260 Creativity	r_{AB}						.708	.545	8.14	3.84	7573
	$r'_{\bar{A}\bar{B}}$						.985	.820	7.60	1.64	
R-340 Math Total	r_{AB}							.828	20.69	8.25	7573
	$r'_{\bar{A}\bar{B}}$							.992	19.02	3.61	

Notes

The data in this table are based on the same cases as Table 5-1.
The diagonal contains reliability coefficients (from Table 5-1)

r_{AB} = correlation of individual students' scores

$r'_{\bar{A}\bar{B}}$ = correlation of school means with each school weighted proportionally to number of schools it represents in population.
(These correlations are based on approximately 810 schools.)

* This correlation coefficient is spuriously inflated by the fact that the R-190 school mean for all Grade 10 students is a weighted average of the corresponding means for boys and girls. (Correlation coefficients not marked with an asterisk are free of spurious elements.)

general ones, affect selection markedly. For instance a school known to have a strong program in science may tend to attract students with particular aptitude in this area. And in so doing, it will probably acquire a student body that is supeior not only in science but, to a lesser extent, is also superior in whatever other abilities are correlated with ability in science. This indirect selection is manifested statistically by interschool variance which is a lower percentage of the total variance in the case of the variable in which indirect selection has occurred than for the variable on which the selection has been more direct. And this kind of situation, where the selection operates directly and to a marked extent on one variable, and only indirectly and to considerably less extent on the other, will have a tremendous effect in increasing the correlation between school means.

Other kinds of narrower factors may be represented in special treatments. This differential treatment, unlike differential selection, may affect only one of the variables to any degree, and have virtually no effect on the other. Thus, for instance, extra stress on science in the curriculum of a school may bring the performance of even the average student well above average in this area, without raising his level of performance in other subjects, such as English, or social studies, commensurately. In such an instance, the correlation between science achievement and English achievement *within the particular school* would probably not be affected much, nor would the corresponding "within-schools correlation" for the entire set of schools. But the correlation between school means in science and English probably *would* be reduced, and to a lesser extent the overall correlation between students' scores in English and science, for the entire set of students, in all schools combined, would also be reduced!

Considerations of this sort in conjunction with inspection of the several formulas for $r_{\bar{A}\bar{B}}$, suggest that while the correlation between means will tend to exceed the correlation of individual scores if the "general" or "pervasive" factors are preeminent over the narrower, more specific factors that would substantially affect one of the variables correlated but not the other, under some circumstances factors that are less general in their effect may have an even more striking effect on correlations of means. The direction of this effect will depend, in part, on whether the specific factor is operating primarily as a specialized selection factor or as a specialized treatment factor. It seems probable, therefore, that comparison of the correlation of school means with the corresponding correlation of individual students' scores will help throw considerable light on what specific factors are operating in a given situation, and just *how* they are operating.

Much of the data presented in later chapters consists in intercorrelations among school means and other school characteristics variables. As variables in correlation matrices, school characteristics, such as per capita expenditure, for instance, operate in much the same way as school means on test scores, and have about the same variety of effects, depending, among other things, on whether the characteristics are acting primarily as general factors on narrow factors, and whether they are to be regarded primarily as selection variables in their effect or as treatment variables.

A slightly different, but related approach to the measurement of school outcomes consists in analyzing the intercorrelations among corresponding school means for the various grades, as one phase of a study of grade-to-grade gains. Results of this analysis, which is still under way, will be presented in a future report.

Summary and Conclusions

This chapter has been concerned primarily with statistical theory underlying correlations among school means (and other school characteristics).

1. Phenomena discussed in this chapter

Formulas have been developed which help explain the difference between these correlations between means and corresponding correlations between individual scores. The chief purpose of these formulas is to help provide insight into the following phenomena which have been observed:

a. Many of the correlations between means have turned out to be very much higher than the corresponding correlations beteen individual scores.

b. Furthermore many of the correlations between means have turned out to be very high in absolute terms as well.

c. It has been obvious from the fact that correlations involving school means were so high that the reliability coefficients for these means must also be extremely high.

2. Reliability of means

a. Group means have higher reliability coefficients than the individual scores on which they are based only if the variability among groups is greater than it would be if the groups were random samples.

b. When this condition of non-randomness is met, the factors that contribute to a very high reliability coefficient for means are:

(1) An extreme departure from randomness as represented by a very high ratio of inter-group variance to total variance.

(2) A high reliability coefficient for the individual scores.

(3) Having a large number of students per group, in the

sample, so that the group means are very stable. (Once the condition of non-randomness of groups has been met, even at a rather low level, it appears that increasing the size of the groups is the simplest and most effective way of increasing the reliability of the means substantially.)

c. While it is theoretically possible for the reliability of group means to be systematically lower than the reliability of individual scores, this can happen only if the groups are more representative of the total sample than random groups would be, in other words if the variability among groups is less than would be likely for random samples. This eventuality would be extremely improbable in the case of school means.

d. For most variables school means easily meet the conditions of Paragraph a above, since the student bodies of schools are clearly non-random samples of the national population of high school youth. Therefore school means have far higher reliability coefficients than the corresponding individual scores.

e. It has been shown, as a matter of fact, that many of these reliability coefficients for school means are just a hairsbreadth away from unity. (Over half of those computed were over .995, and one was .999.)

f. Because these reliability coefficients are so extremely high, there is virtually no "unreliability component" to put an upper limit on correlations between school means.

3. Correlations between means

a. As in the case of reliability coefficients, correlations between group means differ systematically from the corresponding correlations between individual scores only if the groups are non-random with respect to one or both of the variables correlated.

b. With non-random groups, the correlations between means might in theory be either systematically higher or systematically lower than the correlations between individual scores, depending on the nature of the non-randomness. (As it happens, most of the correlations of school means appear to be systematically high rather than low.)

c. The smaller the "within-groups correlation" of individual scores the larger the correlation of group means, and vice versa.

d. Furthermore if the ratio of "between-groups variance" to "within-groups variance" is the same for the two variables being correlated, either the "within-groups correlation" or the correlation of means will be less than the overall correlation and the other one will be greater (except in the improbable event that all three are exactly equal).

e. If the two variables being correlated differ markedly in regard to the ratio of "between-groups variance" to "within-groups variance", both the correlation between means and the "within-groups correlation" will tend to be larger (in comparison with the overall correlation between individual scores) than if the two variance ratios are about equal.

f. With unequal variance ratios, it is possible for both the correlation of means and the "within-groups correlation" to exceed the overall correlation, but they cannot both be lower than it.

4. Statistical components of non-randomness

a. When the subgroups (e.g., schools) are not random subsamples of the total group, this non-randomness is indicated by the fact that the ratio of inter-group variance to total variance is larger than would be expected for random groups of the same size.

b. If the cases in each subgroup sample, in turn, are only a fraction of the cases in the total sub-population represented by the subgroup (for instance if a subgroup consists of the students tested in a particular school and if just a random sample of the students in the school were tested instead of all of them), two separate components contribute to the large inter-group variance that indicates non-randomness. These two components are:

(1) A relatively large variance among the sub-population means (i.e., among the parametric values of the subgroup means).

(2) A relatively large variance within subgroups (e.g., within schools). It should be noted that this component does not enter into the picture as an independent factor at all if all the students in the school (or other subgroup) are in the sample.

5. "Selection factors" and "treatment factors" as sources of inter-school variation

a. By selection factors are meant both indirect factors, such as region, size of city, neighborhood, and kind of school, that keep the student body of a school from being a random or representative sample of all the high school students in the United States, and more direct selection factors, such as the requirement of some special high schools that an entrance examination be passed.

b. By treatment factors are meant such factors as special curricula or special teaching methods, that would have their effect only after the student is already in the school.

c. Both selection factors and treatment factors can be either broad or narrow in scope, affecting students' performance in many areas or just in one relatively narrow area. Insofar as these factors affect performance or result in differential performance they are sources of non-randomness.

d. Whether these sources of non-randomness affect both of the variables markedly that are being correlated or primarily just one of them, the correlation between means is likely to be higher than the correlation between individual scores.

e. But, as implied in Paragraph 3e above, the difference is likely to be greatest if the selection or treatment variable affects one of the variables much more than the other, or especially it artificially increases the intra-group (e.g., intra-school) heterogeneity in regard to one variable and intra-school homogeneity in regard to the other.

f. Selection factors that would tend to inflate "within-schools correlations" and shrink the correlations of means, though theoretically conceivable, are extremely unlikely to occur since such factors would probably operate in such a way as to make the schools more representative of the national population than a random sample would be, rather than less representative.

g. Treatment factors are perhaps a little more likely to increase the with-schools correlation between a pair of variables.

h. In general however, it seems probable that both selection variables and treatment variables would usually operate in such a way as to increase the correlation between means primarily, rather than the within-schools correlation (although, of course, it is not an "either-or" proposition, since both, conceivably, could be increased substantially, as suggested in Paragraph 3f above).

6. The significance of the extremely high reliabilities of means

Because the means have such very high reliability coefficients (almost unity) even very high correlations between means do not signify that the two variables correlated represent exactly the same thing. Even with very high correlations the variables still have a substantial amount of separate reliable variance.

7. Stability of correlations between means

Because the correlations between means tend to be so high, they are also very stable, so that even small differences between them are statistically significant, and may be very important.

8. Interpreting correlations between means: a final word

Because of the extreme complexity of the interrelationships among the factors affecting these correlations, considerable caution is necessary in interpreting them.

Chapter 6

THE INTERCORRELATIONS OF SCHOOL CHARACTERISTICS AND SCHOOL TEST MEANS

In a small high school in an isolated rural area many of the students may never learn to read very well. At a large suburban high school nearly everyone may read at least moderately well. At an isolated rural high school in another area the average reading level may be relatively high. Sometimes the differences between schools in such skills as Reading Comprehension are extremely great, although there is some overlap and one finds poor readers and good readers in practically all schools.

One finds frequently, in large metropolitan school systems, some high schools where the basic achievement level is quite low. One also finds many small rural high schools where the achievement level is much higher than in many large metropolitan schools. There are some metropolitan high schools where the over-all achievement level is generally equal to that of superior college material. It is common to find a high school with a very high achievement level and a high school with a very low achievement level right in the same city and school system.

In order to understand the complexity of this situation, it should be emphasized that such skills as reading are probably significantly affected by a wide variety of experiences, only part of which occur in the school. There is evidence that home and family experiences have a profound effect on the development of reading, vocabulary, and other academic skills. There is evidence that community experiences outside of the home and school may affect these performances. Much of the differences in school outcomes are closely related to differences in the neighborhoods served by the schools.

In order to study the effect of direct school experiences on the development of educational outcomes, it is necessary to document and, in effect, measure the home, family, and community experiences and to consider their effects simultaneously with those of the direct school experiences in making analyses. In the Project Talent School Characteristics and Guidance Program Questionnaires, an attempt has been made to obtain as much important information as possible about all the relevant experiences that the students have had or are having. Many of the questions such as occupation of the father, education of the mother, quality of housing, family income, and a number of other similar items, are measures of the home environment. Many other questions are designed to be measures of the community and social environment. There is no easy way of documenting the exact status of the indirect screening that goes on in connection with the schools, but evidence on this may be inferrable from such information as the proportion of the student body in different kinds of curricula or courses of study, the basic type of school, whether it is vocational or not, and other similar information.

How School Outcomes Were Measured

School average standardized test scores were used as measures of selected student outcomes and as control variables for each school. Some of these tests were measures of achievement and information in the high school curriculum areas of English, mathematics, and physical sciences. Other tests used were measures of basic intellectual skills such as arithmetic reasoning, reading comprehension, and abstract non-verbal reasoning. A test of information over a wide range of areas included sub-tests of physical sciences and mechanical information. There was also a test of mechanical reasoning. Estimates by the principal of each school were relied on as measures of absenteeism, dropout, delinquency, and college attendance. The school was used as the statistical unit and statistics were computed for samples of schools just as they are usually computed for samples of students. Correlations and distributions were obtained in this manner with the school as the statistical unit.

The Tests in the Studies

The standardized tests were part of the two-day battery of tests administered to all of the students in Project Talent in 1960. All of these tests were specially developed by the Project Talent staff for the Project, and are described in detail in Report No. 1, Design for a Study of American Youth, (Flanagan, 1960), and the U.S. Office of Education Cooperative Research Monograph No. 9, Types of Tests in Project Talent, (Dailey, 1961).

Reading Comprehension Test

The purpose of this test is to measure the ability to comprehend written materials. The ability measured is the ability to read with comprehension, rather than merely ability to mouth or recognize the printed word without understanding the fact, idea, or concept that the writer is attempting to convey. The test includes passages on a wide range of topics. The student reads the passage and then answers a number of questions about it, referring back to the passage as often as he likes. Few of the items is answerable without reading the passage.

The ability measured by this test is sometimes called "academic intelligence" and is a good predictor of school success in an academic or liberal arts curriculum. In the unusual situation where a student scores low on the reading comprehension test but obtains good scores on other types of intellectual tests, he may have a specific reading disability that can be corrected by special remedial training.

English Test

The purpose of this test is to measure ability to express oneself adequately in English. There is a total score and five separate subscores: spelling, capitalization, punctuation, English usage, and effective expression. The test is primarily concerned with written English, but presumably some generalization to spoken English on the basis of the English Usage and Effective Expression subscores is justifiable.

Spelling

This test measures the ability to spell common words which have been encountered by most high school students. Students who do not have especially large vocabularies but who are able to spell most of the words they have encountered should get good scores. Specifically, what is actually measured is the ability to recognize correct and incorrect spelling rather than the ability to recall how a word is spelled.

Capitalization

The purpose of this test is to determine if the student has mastered the general rules concerning the words that are capitalized and the words that start with small letters.

Punctuation

The test measures knowledge of appropriate use of standard punctuation marks: period, comma, semicolon, colon, apostrophe, single quotes, double quotes, question mark, exclamation point, dash, parentheses, and hyphen. The student must differentiate between correct and incorrect punctuation. He is not asked to determine which of two or more acceptable or defensible manners of punctuation is best.

English Usage

This test measures knowledge of correct English usage and ability to apply the rules of grammar.

Effective Expression

The purpose of this test is to measure the ability to recognize good prose expression--that is, sentences which express ideas clearly, concisely, and smoothly. The student is asked to tell which of a number of ways of expressing an idea is best.

Mathematics Tests

Mathematics I is concerned solely with arithmetic reasoning -- a topic that is taught in elementary school, but is not generally taught formally in the 9th Grade or beyond. Parts II and III, on the other hand, are concerned primarily with high school mathematics.

A brief description of the Mathematics Tests follow: Mathematics -

Part I (Arithmetic Reasoning). Part I is intended to measure the ability to do the kind of reasoning required to solve mathematics problems. Actual computation except at a very simple level is not included in this test. Most of the problems require the student to tell how he would go about solving a problem, rather than actually solving it. This ability is considered to be one of the chief components of general academic ability.

Mathematics - Part II (Introductory). The purpose of this subtest is to measure achievement in all kinds of mathematics generally taught up to and including the 9th Grade, with the exception of areas covered in the Arithmetic Computation Test and in Mathematics-Part I (Arithmetic Reasoning). The primary emphasis of this test is on elementary algebra; other topics include fractions, decimals,percentage, square roots, intuitive geometry, and elementary measurement formulas. While the topics covered are taught in Grade 9 or earlier in most schools, curricula differ considerably in regard to grade placement of various topics.

Mathematics - Part III (Advanced). This subtest covers topics normally taught in Grades 10-12 in college-preparatory courses. As in the case of Mathematics-Part II, the items are intended primarily to test understanding and application of basic concepts and methods, not rote memory. A wide range of subjects is included: plane geometry, solid geometry, algebra, trigonometry, elements of analytic geometry, and introductory calculus. It should be noted that some of these subjects are not offered in most high schools. However, students who have taken college preparatory mathematics beyond the Grade 9 level, and have really understood it, should be able to score well.

Information Test

The total score is based on 252 items covering a very wide variety of areas, including information of the following kinds:

- General Vocabulary
- Literature
- Music
- Social Studies
- Mathematics
- Physical Sciences
- Biological Sciences
- Aeronautics and Space
- Electricity and Electronics
- Mechanical
- Farming
- Home Economics
- Sports

Physical Sciences Information Test

The items in this test sample concepts based on representative curriculum from various cities and states, and cover topics taught in elementary school and high school in the areas of chemistry, physics, astronomy, and other areas.

Mechanical Information Test

This test makes considerable use of general information about automobiles, and the common tools and machines with which most boys have some familiarity if they are interested in and active in mechanical work. The test primarily measures what has been called the mechanical experience factor, and is similar to mechanical information tests frequently used for occupational selection and guidance.

Abstract Reasoning Test

This test measures ability in a specific reasoning task in which formal instruction is not generally given in school at any level. It is not intended to imply here that the schools fail to provide instruction in reasoning. They do provide such instruction--in mathematics and science courses, for instance. But the Abstract Reasoning Test provides a measure of reasoning ability as demonstrated on a task that is not curriculum-linked; and therein lies its particular utility as a control variable. Other reasoning tasks are covered in other tests. Each item consists of a pattern of diagrams, with one missing portion to be selected from among several options. The solution of the problem depends upon ability to determine the logical relationship of the diagrams in order to determine the missing element. The Mathematics Test, of course, measures ability to do reasoning about problems involving quantitative or other mathematical concepts. The Reading Comprehension Test requires thorough comprehension of verbal materials; and thorough comprehension of such materials requires the ability to reason correctly about their implications. Likewise the Mechanical Reasoning Test requires comprehension of mechanical principles -- and this necessarily involves at least a modicum of reasoning. Thus the Abstract Reasoning Test is a useful control variable for the Reading Comprehension Test, the Mathematics Test, and Mechanical Reasoning, among others. (It should be noted that among the tests for which it is proposed to use Abstract Reasoning as a control variable are tests which are themselves being used as control variables in other contexts).

Creativity Test

The Creativity Test has many of the same advantages as the Abstract Reasoning Test, in regard to its utility as a control variable. Like the Abstract Reasoning Test, it is not curriculum-linked. Unlike the Abstract Reasoning Test, the task it requires has a verbal component.

The purpose of the Creativity Test is to measure a student's ability to find clever solutions to problems requiring ingenuity. The problems are practical ones which might actually be encountered in real life. The items are set up in such a way that the student must actually develop or "create" the solution, rather than merely pick it from among several presented.

Mechanical Reasoning Test

The Mechanical Reasoning Test is also useful as a control variable, particularly for such information areas as Mechanical Information and Physical Science Information.

The purpose of the Mechanical Reasoning Test is to measure the ability to understand and visualize the effects of the operation of everyday physical forces and principles (such as gravitation, pressure, equilibrium), and basic kinds of mechanisms (such as gears, pulleys, wheels, springs, levers).

The test items consist of drawings depicting various kinds of mechanical actions, and mechanical principles in operation: leverage, rotation of gears, etc. The task is to answer questions asked about the operation of the parts.

Non-test Variables

Some of the other variables that have been used are per-pupil expenditure rate, teachers' salaries, existence of a guidance program in the school, and other economic, socio-economic, and educational factors. Information on all these school characteristics comes from the General School Characteristics Questionnaire (GSC), and the Guidance Program Questionnaire (GP), which were filled out by each of the Project Talent schools. (See Appendix A)

The following are some of the key questionnaire items that are important to various analyses.

GSC-88. Pupils attending Grades 9-12 in your school come from areas which are best described as primarily

1. urban residential.
2. urban industrial.
3. urban commercial.
4. suburban residential.
5. suburban industrial.
6. suburban commercial.
7. scattered over the entire city (larger than 5000 people).
8. small town (under 5000 people).
9. rural-farm.
10. Other (specify)______________________________
11. Students are resident students -- cannot estimate.

GSC-87. The residences in the area served by your school are best described as primarily

1. expensive private homes.
2. moderate-priced homes.
3. low-cost homes.
4. high-rental apartments.
5. moderate-rental apartments.
6. low-rental apartments.
7. low-income areas.
8. about equally apartments and homes.
9. students are resident students -- cannot estimate.

Responses to the latter item were dichotomized to categorize housing as low-quality or low-income (Options 3, 6, 7) versus moderate-to-high-quality (Options 1, 2, 4, 5, 8, 9). Two additional questionnaire items used as control variables are:

GSC-89. In dollars per year, what was the average per-pupil expenditure for all purposes in your school system last year (Grades 9-12)? (Write in the blank provided). $________________per year

GP-1. Does your school have a Guidance Program in which one or more persons is officially assigned, part or full-time, to working with individual students?

A. YES

B. NO

In the case of the school outcome variables, as in the case of the control variables, not all of the measures used are test scores. Information from the General School Characteristics Questionnaire has also been used for this purpose. Among the school outcome variables from this source are one positively oriented variable (per cent of graduates attending college) and three negatively oriented variables (absenteeism, juvenile delinquency, and high school dropouts). The questionnaire items yielding this information are as follows:

GSC-72. About what percentage of the boys in your graduating senior class last year went on to college?

1. None
2. 0-9%
3. 10-19%
4. 20-29%
5. 30-39%
6. 40-49%
7. 50-59%
8. 60-69%
9. 70-79%
10. 80-89%
11. 90-99%
12. All

GSC-29. Estimate the average daily percentage of absenteeism in Grades 9-12 in your school over the current school year.

1. 2% or less
2. 3-5%
3. 6-8%
4. 9-11%
5. 12-14%
6. 15-17%
7. 18-20%
8. 21-23%
9. 24-27%
10. 28% or more

GSC-69. During the last school year, about what percentage of your students in Grades 9-12 were required to appear before juvenile courts for one or more offenses?

1. None
2. 1%
3. 2%
4. 3%
5. 4%
6. 5%
7. 6%
8. 7%
9. 8%
10. 9% or more

GSC-70. About what percentage of all boys who enter your 10th Grade drop out before graduation? (Do not include boys who transfer in your calculation).

1. 0-9%
2. 10-19%
3. 20-29%
4. 30-39%
5. 40-49%
6. 50% or more

Intercorrelations of School Test Means and Questionnaire Items

Selected items in the school questionnaires have been organized into a series of three overlapping matrices, or sets of variables. It is not possible to analyze more than fifty variables at a time with the available incomplete data program on the IBM-7070 computer, so it is necessary to have these overlapping sets. Each set includes the following six test means for Grade 10 boys and girls combined except for the Information Test:

R-190	Information Total - Boys
R-190	Information Total - Girls
R-230	English Total
R-340	Mathematics Total (I + II + III)
R-250	Reading Comprehension
R-260	Creativity

The following 13 items from the General School Characteristics Questionnaire were also included in every set or matrix:

GSC-1	Type of school
2	Grades in the school
9	Class size for science and math
29	Absentee rate
70	Dropout rate for boys
72	College attendance for boys
75	Per cent going to junior college
77	Per cent in remedial reading
87	Quality of housing
88	Rural and small town vs. urban
89	Per-pupil expenditure for entire school system
101	Years as principal
59	Senior class size

The first matrix includes all the above plus a number of other items selected as being expected to correlate significantly with one or more of the tests. Matrix I is called the test relationships matrix. Its purpose is to explore the interrelationships between the tests and the items in the two questionnaires expected to correlate with them. Matrix II is oriented towards the school staff and includes all the items about the faculty and principal. The third matrix is oriented towards school policies and philosophy.

Since there are usually a few omissions for each item of a questionnaire, it is not possible to limit the analysis to those schools complete on all items. The computations are carried out using the school weights (weights B) which equate for differences in sampling ratio and response rate in order to reproduce the total distribution of schools. The N reported in the tables is the weighted N which estimates the total number of public senior high schools in the country. In these studies the school is the statistical unit.

Table 6-1 describes the 50 variables used in Matrix I. It will be noted that some of the items, such as Variable 15- Housing Quality (GSC-87), are presented as a percentage even though the options to that question did not

Table 6-1

Tests, School Characteristics Questionnaire and Guidance Program Questionnaire Items: Means and Standard Deviation for Matrix I - Test Relationships

Var. No.	Item Ques. No.	Item Name	Value	M	SD	Weighted* N
1	R-190	Info. Test--boys	Mean grade 10	122.6	22.4	18929
2	R-190	Info. Test--girls	Mean grade 10	112.5	18.5	18746
3	R-230	English Test	Mean grade 10	76.5	7.4	18791
4	R-340	Math Test--Total	Mean grade 10	19.0	3.6	18180
5	R-250	Rdg. Comp.	Mean grade 10	25.8	5.3	18791
6	R-260	Creativity Test	Mean grade 10	7.6	1.6	18791
7	GSC-1	Type of school	% comprehensive	94.0%	23.7%	18977
8	GSC-2	Grade structure	% k-12, 1-12	46.8%	49.9%	18977
9	GSC-9	Class size--Sci. & Math	No. students	22.8	6.2	18892
10	GSC-29	Absentee rate	%	5.2%	2.8%	18954
11	GSC-70	Dropout--boys	%	9.9%	8.6%	18800
12	GSC-72	College--boys	%	28.0%	26.3%	18643
13	GSC-75	% junior college	%	6.9%	9.4%	18695
14	GSC-77	% remedial reading	%	4.1%	5.1%	18831
15	GSC-87	Housing quality	% low cost housing	38.7%	48.7%	18977
16	GSC-88	Rural-urban	% rural or small town	68.1%	46.6%	18977
17	GSC-89	Per-pupil expenditure	dollars/year	$374.58	171.56	18064
18	GSC-101	Years as principal	Years	11.8	8.4	18954
19	GSC-59	Senior class size	No. students	85.7	126.8	18649

* Weight B used to reproduce public high school population

(Table continued on next page)

Table 6-1 (continued)

Tests, School Characteristics Questionnaire and Guidance Program Questionnaire Items: Means and Standard Deviation for Matrix I - Test Relationships

Var. No.	Item Ques. No.	Item Name	Value	M	SD	Weighted* N
20	GSC-3	Accreditation	% accredited	95.7%	20.4%	18977
21	GSC-4	Midyear admission to first grade	% permitting	2.5%	15.5%	18977
22	GSC-5	Midyear promotion	% permitting	7.3%	30.3%	18956
23	GSC-6	No. days school year	Days per year	179.4	6.5	18763
24	GSC-7	No. class periods a day	Number/day	4.5	1.0	18956
25	GSC-9	Class size--Sci. & Math	No. students	22.8	6.2	18892
26	GSC-10	Class size--other	No. students	21.2	9.9	18870
27	GSC-11	Homework expected	Hours	1.7	.7	18902
28	GSC-12	Study halls	% one or more	89.0%	31.3%	18955
29	GSC-15-7	Accelerated curriculum	% one or more	37.9%	48.5%	18760
30	GSC-16	Advanced placement	% using CEEB Syllabus	1.7%	12.8%	18977
31	GSC-32	No. books in library	No. books	1969.0	892.0	18600
32	GSC-33	Age of building	Years	24.3	15.2	18929
33	GSC-34	Last renovation	Years (ago)	6.8	9.4	18815
34	GSC-39	Homogeneous grouping	% one or more	54.0%	49.8%	18977
35	GSC-40	Tracks	% two or more	49.0%	50.0%	17900

* Weight B used to reproduce public high school population

(Table continued on next page)

Table 6-1 (continued)
Tests, School Characteristics Questionnaire and Guidance Program Questionnaire Items: Means and Standard Deviation for Matrix I - Test Relationships

Var. No.	Item Ques. No.	Item Name	Value	M	SD	Weighted* N
36	GSC-41	Acceleration policy	Permitted by	29.1%	54.6%	18977
37	GSC-56	Starting salary--male teachers	Dollars per year	$3751.00	$652.00	18895
38	GSC-58	Experience of teachers	Years	10.5	3.8	18869
39	GSC-69	Juvenile delinquency	%	1.1%	1.4%	18948
40	GSC-76	Remedial mathematics	%	3.7%	4.3%	18863
41	GSC-78	Repeat or remedial summer work	%	3.4%	3.3%	18758
42	GSC-81	Summer--new work	% permitting	52.7%	49.9%	18977
43	GSC-82	Double schedule	% having	0.4%	8.1%	18953
44	GSC-83	Citizens study	% having	18.5%	38.8%	18977
45	GSC-84	PTA	% participating	31.7%	19.2%	18710
46	GSC-86	Age of housing	% less than 20 yrs.	63.0%	48.3%	18977
47	GSC-93	Bi-lingual families	%	4.0%	14.9%	18931
48	GSC-104	Sex of principal	% males	97.4%	15.9%	18935
49	GSC-105	Principal's prior teaching experience	Years	11.0	7.6	18915
50	GP-1	Guidance Program	% having	73.1%	44.3%	18915

* Weight B used to reproduce public high school population

ask specifically for responses on a continuum. In these cases the options were dichotomized in order to obtain the result shown under the "Value" column. Many of the items were such as to permit the computation of straightforward product moment correlation coefficients. The means and standard deviations are also reported for each item. The last column gives the weighted N for each variable.

Table 6-2 shows the intercorrelations for Matrix I. From this matrix it can be seen that the highest single correlation with a questionnaire item for Information Total--Boys (R-190) is .49 with variable 37--Starting Salary, Male. This test also correlates .38 with variable 15 -- Quality of Housing, .37 with variable 10--Absentee Rate, .36 with variable 17-- Per-Pupil Expenditure for the entire school system, .33 for variable 12 -- Per Cent of Boys Entering College. Correlating between .26 and .24 with the same test are the following variables in order of absolute magnitude: 35--Number of Tracks, 31--Number of Books in the Library, 24--Number of Periods in the Day, 32--Age of the School Building, 50--Whether there is a Guidance Program, 19--Size of the Senior Class, 23--Number of School Days in the Year, 16--Rural and Small Town vs. Urban, 29--Whether there is an Accelerated Curriculum, 11--The Boys' Dropout Rate, and 42--Whether New Summer Work is Permitted. All of the other variables correlate less than .15. The other test score vs. questionnaire item correlation patterns are very similar.

The correlations among the tests are relatively high, ranging as high as .92 between English Total and Reading Comprehension. It is interesting to note that the correlation between Reading Comprehension and Information--Boys, .92, is higher than that between Information Total--Boys and Information Total --Girls, .88. Substantial regional differences in sex differential on the Information Test have been found to exist and this acts to reduce the correlation between boys and girls on the same test. It has been found that as one condenses data from individual observations to school means for computing correlations, the over-all level of the correlations tends to rise appreciably. Recent pilot studies have indicated that the general level of correlations becomes even higher if one deals with state means instead of school means, and still higher if dealing with means for regions. As shown in Chapter 5, the reliabilities for such means are extremely high.

There are some interesting differences to be seen in Matrix I in the intercorrelational patterns of variable 37--Starting Salary, Male, and variable 17--Per-Pupil Expenditure. There is a moderately high correlation of approximately .57 between these two variables, as might be expected. However, as compared with per-pupil expenditure, starting salary for male teachers correlates quite a bit higher with Reading Comprehension scores as well as variables 8--Grade Structure, 15--Housing Quality, 16--Rural-Urban, 19--Senior Class Size, 31--Books in Library, 34--Homogeneous Grouping, and 35--Multiple Tracks. On the other hand, per-pupil expenditure correlates more highly with variable 9--Class Size in Science and Math. Apparently, as compared with per-pupil expenditure, higher starting salaries for men are more likely to be associated with urban and large schools. The correlation between per-pupil

Table 6-2

Matrix I. Correlations of School Characteristics Items and Selected Test Means for 10th Grade (Public Senior High Schools)

Test Relationships Matrix

VARIABLE NUMBER	INFORMATION TEST--BOYS (R-190)	INFORMATION TEST--GIRLS (R-190)	ENGLISH TOTAL (R-230)	MATHEMATICS TEST--TOTAL (R-340)	READING COMPREHENSION (R-250)	CREATIVITY TEST (R-260)	TYPE OF SCHOOL	GRADE STRUCTURE	CLASS SIZE--SCI. & MATH	ABSENTEE RATE	DROP-OUT--BOYS	COLLEGE--BOYS	PERCENT JUNIOR COLLEGE	PERCENT REMEDIAL READING	HOUSING QUALITY	RURAL-URBAN	PER PUPIL EXPENDITURE	YEARS AS PRINCIPAL	SENIOR CLASS SIZE	ACCREDITATION	MID-YR. ADMISSION TO GR. 1	MID-YEAR PROMOTION	NO. DAYS IN SCHOOL YEAR	NO. CLASS PERIODS PER DAY	CLASS SIZE--SCI. & MATH	VARIABLE NUMBER
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	
1		.881	.889	.872	.915	.865	.113	-.147	-.140	-.368	-.155	.330	.017	-.016	.384	.165	.358	-.048	.187	-.029	-.070	-.051	.169	.212	-.140	1
2	1873		.846	.867	.879	.828	.039	-.116	-.224	-.371	-.210	.319	.046	-.043	.372	.083	.419	-.075	.109	-.057	-.088	-.053	.146	.269	-.224	2
3	1874	1855		.884	.917	.829	.139	-.133	-.116	-.360	-.138	.291	.052	-.049	.361	.128	.236	-.029	.132	.004	-.096	-.085	.114	.138	-.116	3
4	1813	1795	1813		.881	.820	.088	-.124	-.146	-.343	-.177	.311	.036	-.009	.379	.109	.318	-.017	.141	-.023	-.110	-.076	.121	.198	-.146	4
5	1874	1855	1879	1813		.904	.106	-.172	-.143	-.335	-.177	.341	.042	-.008	.382	.169	.314	-.054	.197	-.035	-.099	-.086	.149	.156	-.143	5
6	1874	1855	1879	1813	1879		.079	-.148	-.184	-.339	-.192	.305	.033	-.007	.368	.138	.374	-.080	.164	-.046	-.092	-.079	.161	.158	-.184	6
7	1874	1856	1860	1799	1860	1860		.035	.080	-.033	-.029	-.043	.019	-.025	.078	-.066	-.122	.006	.051	.128	.012	.033	-.054	-.057	.080	7
8	1874	1856	1860	1799	1860	1860	1898		-.323	-.113	-.053	-.147	.020	-.171	-.200	-.433	-.040	-.003	-.407	.085	-.027	-.039	-.066	.053	-.323	8
9	1865	1847	1852	1790	1852	1852	1889	1889		.290	.202	-.019	-.058	.084	.042	.399	-.333	.146	.416	.004	.127	.041	.063	-.178	1.000	9
10	1872	1854	1858	1797	1858	1858	1895	1895	1887		.232	-.148	-.023	.058	-.096	.088	-.162	.000	.114	-.029	-.011	.018	.035	-.088	.290	10
11	1868	1849	1854	1793	1854	1854	1880	1880	1872	1878		-.104	-.061	.048	-.094	.104	-.171	.067	.144	.010	.082	.090	.022	-.053	.202	11
12	1852	1834	1844	1782	1844	1844	1864	1864	1856	1862	1860		.179	.094	.245	.208	.198	.025	.247	-.035	-.037	.014	.110	.012	-.019	12
13	1856	1837	1847	1788	1847	1847	1870	1870	1861	1867	1863	1858		.044	.022	-.019	.093	-.015	.001	-.086	-.007	.064	-.002	-.036	-.058	13
14	1860	1841	1846	1785	1846	1846	1883	1883	1874	1881	1866	1850	1857		.008	.139	.100	.045	.179	-.125	.045	.054	.087	-.058	.084	14
15	1874	1856	1860	1799	1860	1860	1898	1898	1889	1895	1880	1864	1870	1883		.228	.126	.053	.232	-.032	-.047	-.037	.035	.025	.042	15
16	1874	1856	1860	1799	1860	1860	1898	1898	1889	1895	1880	1864	1870	1883	1898		-.012	.155	.576	-.058	.100	.128	.162	-.080	.399	16
17	1783	1764	1769	1710	1769	1769	1806	1806	1798	1804	1789	1773	1780	1794	1806	1806		-.064	.035	-.183	.015	.062	.151	.311	-.333	17
18	1872	1853	1858	1797	1858	1858	1895	1895	1887	1893	1878	1862	1867	1881	1895	1895	1804		.125	-.041	.045	.076	.038	-.076	.146	18
19	1854	1835	1845	1786	1845	1845	1865	1865	1856	1863	1860	1853	1858	1853	1865	1865	1778	1863		-.096	.165	.269	.274	-.045	.416	19
20	1874	1856	1860	1799	1860	1860	1898	1898	1889	1895	1880	1864	1870	1883	1898	1898	1806	1895	1865		.001	-.033	.037	-.080	.004	20
21	1874	1856	1860	1799	1860	1860	1898	1898	1889	1895	1880	1864	1870	1883	1898	1898	1806	1895	1865	1898		.357	.076	-.026	.127	21
22	1872	1853	1858	1797	1858	1858	1896	1896	1887	1893	1878	1862	1867	1881	1896	1896	1804	1893	1863	1896	1896		.068	.006	.041	22
23	1855	1837	1841	1780	1841	1841	1876	1876	1868	1874	1859	1844	1851	1862	1876	1876	1785	1874	1844	1876	1876	1874		.051	.063	23
24	1872	1853	1858	1797	1858	1858	1896	1896	1887	1893	1878	1862	1867	1881	1896	1896	1804	1893	1863	1896	1896	1893	1874		-.178	24
25	1865	1847	1852	1790	1852	1852	1889	1889	1889	1887	1872	1856	1861	1874	1889	1889	1798	1887	1856	1889	1889	1887	1868	1887		25
26	1863	1845	1849	1788	1849	1849	1887	1887	1885	1887	1869	1854	1859	1872	1887	1887	1796	1885	1854	1887	1887	1885	1866	1885	1885	26
27	1867	1848	1853	1792	1853	1853	1890	1890	1882	1890	1873	1857	1862	1876	1890	1890	1799	1888	1858	1890	1890	1888	1869	1888	1882	27
28	1872	1853	1858	1797	1858	1858	1896	1896	1887	1893	1878	1862	1867	1881	1896	1896	1804	1893	1863	1896	1896	1893	1874	1893	1887	28
29	1852	1834	1839	1777	1839	1839	1876	1876	1867	1874	1859	1843	1848	1861	1876	1876	1787	1874	1843	1876	1876	1874	1855	1874	1867	29
30	1874	1856	1860	1799	1860	1860	1898	1898	1889	1895	1880	1864	1870	1883	1898	1898	1806	1895	1865	1898	1898	1896	1876	1896	1889	30
31	1837	1818	1823	1764	1823	1823	1860	1860	1856	1860	1843	1827	1832	1845	1860	1860	1773	1858	1830	1860	1860	1858	1839	1858	1856	31
32	1869	1851	1855	1794	1855	1855	1893	1893	1884	1891	1875	1859	1865	1878	1893	1893	1804	1891	1860	1893	1893	1891	1871	1891	1884	32
33	1858	1839	1844	1783	1844	1844	1881	1881	1873	1879	1864	1848	1853	1869	1881	1881	1794	1879	1851	1881	1881	1879	1860	1879	1873	33
34	1874	1856	1860	1799	1860	1860	1898	1898	1889	1895	1880	1864	1870	1883	1898	1898	1806	1895	1865	1898	1898	1896	1876	1896	1889	34
35	1766	1748	1753	1694	1753	1753	1790	1790	1781	1788	1773	1757	1764	1785	1790	1790	1705	1788	1757	1790	1790	1788	1771	1788	1781	35
36	1874	1856	1860	1799	1860	1860	1898	1898	1889	1895	1880	1864	1870	1883	1898	1898	1806	1895	1865	1898	1898	1896	1876	1896	1889	36
37	1866	1847	1852	1793	1852	1852	1890	1890	1881	1887	1872	1856	1861	1875	1890	1890	1800	1887	1857	1890	1890	1887	1868	1887	1881	37
38	1864	1845	1851	1790	1851	1851	1887	1887	1878	1885	1870	1854	1859	1873	1887	1887	1796	1885	1855	1887	1887	1885	1869	1885	1878	38
39	1872	1853	1858	1797	1858	1858	1895	1895	1886	1893	1878	1862	1869	1880	1895	1895	1804	1893	1863	1895	1895	1893	1875	1893	1886	39
40	1863	1845	1849	1788	1849	1849	1886	1886	1878	1884	1869	1854	1861	1878	1886	1886	1799	1884	1856	1886	1886	1884	1865	1884	1878	40
41	1853	1835	1839	1778	1839	1839	1876	1876	1867	1874	1859	1843	1851	1874	1876	1876	1787	1873	1846	1876	1876	1874	1854	1874	1867	41
42	1874	1856	1860	1799	1860	1860	1898	1898	1889	1895	1880	1864	1870	1883	1898	1898	1806	1895	1865	1898	1898	1896	1876	1896	1889	42
43	1872	1853	1858	1797	1858	1858	1895	1895	1887	1893	1878	1862	1870	1883	1895	1895	1804	1893	1863	1895	1895	1893	1874	1893	1887	43
44	1874	1856	1860	1799	1860	1860	1898	1898	1889	1895	1880	1864	1870	1883	1898	1898	1806	1895	1865	1898	1898	1896	1876	1896	1889	44
45	1848	1829	1834	1778	1834	1834	1871	1871	1862	1869	1854	1838	1843	1859	1871	1871	1783	1869	1839	1871	1871	1869	1850	1869	1862	45
46	1874	1856	1860	1799	1860	1860	1898	1898	1889	1895	1880	1864	1870	1883	1898	1898	1806	1895	1865	1898	1898	1896	1876	1896	1889	46
47	1869	1851	1855	1794	1855	1855	1893	1893	1884	1891	1875	1860	1865	1878	1893	1893	1804	1891	1860	1893	1893	1891	1872	1891	1884	47
48	1870	1851	1856	1795	1856	1856	1893	1893	1885	1891	1876	1860	1865	1879	1893	1893	1802	1893	1861	1893	1893	1891	1874	1891	1885	48
49	1868	1849	1854	1793	1854	1854	1891	1891	1883	1891	1874	1858	1863	1877	1891	1891	1800	1891	1859	1891	1891	1889	1870	1889	1883	49
50	1868	1849	1854	1793	1854	1854	1891	1891	1883	1889	1874	1858	1863	1877	1891	1891	1800	1889	1859	1891	1891	1889	1870	1889	1883	50

Note.- In computing this matrix school data were weighted (weights B) to reproduce the national population of public senior high schools. The computer program for incomplete data was used. The lower left portion of the matrix shows the N divided by 10 for each correlation.

Table 6-2 (continued)

Matrix I. Correlations of School Characteristics Items and Selected Test Means for 10th Grade (Public Senior High Schools)

Test Relationships Matrix

VARIABLE NUMBER	CLASS SIZE--OTHER 26	HOMEWORK EXPECTED 27	STUDY HALLS 28	ACCELERATED CURRICULUM 29	ADVANCED PLACEMENT 30	NO. BOOKS IN LIBRARY 31	AGE OF BUILDING 32	LAST RENOVATION 33	HOMOGENEOUS GROUPING 34	TRACKS 35	ACCELERATION POLICY 36	SALARY 37	EXPERIENCE OF TEACHERS 38	JUVENILE DELINQUENCY 39	REMEDIAL MATH 40	REPEAT OR REMEDIAL SUMMER WORK 41	SUMMER--NEW WORK 42	DOUBLE SCHEDULE 43	CITIZENS STUDY 44	PTA 45	AGE OF HOUSING 46	BI-LINGUAL FAMILIES 47	SEX OF PRINCIPAL 48	PRINCIPAL'S YRS. OF TEACHING EXP. 49	GUIDANCE PROGRAM 50	VARIABLE NUMBER
1	-.068	.062	.068	.162	.041	.243	.208	.003	.13[illegible]	.257	.038	.487	-.012	.097	-.059	.133	.151	.066	.076	.072	.070	.068	-.015	.015	.203	1
2	-.139	.032	.090	.133	.037	.178	.205	.027	.102	.191	.008	.521	-.108	.125	-.087	.067	.114	.040	.073	.063	.055	.052	-.073	.007	.205	2
3	-.057	.036	.061	.131	.031	.246	.223	.028	.080	.200	.021	.378	-.013	.090	-.083	.105	.140	.055	.085	.048	.043	.078	.003	.025	.179	3
4	-.094	.079	.054	.144	.068	.203	.206	.028	.102	.200	-.000	.421	-.064	.037	-.038	.089	.121	.058	.063	.076	.026	.038	-.008	.002	.210	4
5	-.059	.067	.066	.157	.058	.253	.205	.042	.098	.231	.043	.465	-.042	.120	-.054	.122	.170	.068	.067	.064	.045	.077	-.019	.025	.261	5
6	-.106	.014	.036	.130	.042	.185	.215	.023	.104	.194	-.009	.495	-.092	.145	-.052	.070	.129	.046	.059	.063	.077	.063	-.019	.025	.213	6
7	.067	-.024	-.085	.020	-.006	.043	.005	.005	.081	.032	.003	-.026	.099	-.135	.023	.028	.021	.015	.031	.071	-.024	-.027	-.034	-.035	-.030	7
8	-.213	-.105	.016	-.180	-.028	-.387	.140	-.114	-.330	-.220	-.095	-.177	-.162	-.212	-.105	-.192	-.245	-.077	-.093	.025	.091	-.210	-.019	-.123	-.317	8
9	.522	.129	-.019	.110	.042	.424	-.236	.060	.315	.153	.149	-.092	.213	.096	.075	.209	.185	.062	-.006	-.036	-.145	.070	-.001	.042	.138	9
10	.218	.034	.004	.028	.006	.067	-.170	.049	.024	.018	.041	-.169	-.039	.075	.073	.030	-.009	.041	-.023	-.063	-.051	.001	-.002	-.034	.030	10
11	.125	.065	-.034	.068	-.014	.044	-.047	.018	.099	.018	.084	-.153	.050	.159	.072	.144	.001	.033	.009	-.058	-.047	-.074	.059	.061	-.095	11
12	-.036	.183	-.004	.173	.100	.202	-.007	.033	.115	.073	.098	.204	.028	.097	.081	.169	.194	.276	.091	.066	-.082	.041	-.032	.030	.047	12
13	-.064	.037	-.051	.057	.065	.022	-.041	.022	-.015	-.046	.070	.079	-.063	.099	.060	.014	.014	-.028	-.017	.059	-.127	.029	.026	-.092	.030	13
14	.136	.074	-.065	.124	-.023	.170	-.063	-.007	.196	.090	.020	.165	.011	.107	.561	.157	.079	.027	.060	-.071	-.029	.067	.002	.069	.158	14
15	.063	.035	.028	.088	.048	.231	.015	.043	.139	.169	.005	.258	.020	-.031	-.008	.128	.102	.058	.093	.123	-.045	.036	.001	.040	.150	15
16	.262	.141	-.035	.275	.071	.429	-.112	.114	.318	.196	.138	.205	.202	.161	.094	.332	.232	.119	.079	.015	-.156	.168	.015	.184	.249	16
17	-.146	-.060	.003	.057	.112	.007	.126	.006	-.000	.055	-.063	.566	-.179	.136	.017	.007	.040	.023	-.014	.019	.119	.164	-.005	.087	.156	17
18	.053	-.031	-.010	.105	.001	.165	-.026	.022	.020	.022	.115	-.034	.223	-.024	.043	.108	.036	.051	.000	.018	.010	-.021	.042	.259	.007	18
19	.223	.170	.010	.308	.171	.404	-.054	.039	.339	.266	.191	.271	.246	.180	.116	.437	.282	.279	.069	.005	-.091	.169	.019	.206	.264	19
20	.032	-.024	-.025	.085	-.104	-.009	.005	.030	-.028	-.097	.016	-.188	.096	-.098	-.041	-.002	-.082	.020	.002	-.005	-.014	-.161	.015	-.068	-.069	20
21	.078	.005	-.059	.041	-.016	.022	.010	-.029	.058	.089	.114	.060	.102	.028	.032	.065	.058	.065	-.045	-.035	-.025	.077	.029	.055	-.025	21
22	.018	-.015	-.009	.071	.041	.048	.050	-.034	.091	.087	.123	.073	.126	.015	-.017	.194	.109	.038	.066	-.002	.032	.094	.061	.065	.010	22
23	.206	.052	-.016	.123	.029	.141	-.026	.027	.140	.095	.060	.177	.036	.055	.056	.115	.037	.143	-.013	-.012	.064	.098	.038	.067	.105	23
24	-.130	-.029	.111	-.022	.046	-.024	.159	-.049	-.094	.061	-.004	.304	-.021	.023	-.057	.003	-.039	-.043	.024	-.009	.154	.103	-.004	.052	.083	24
25	.522	.129	-.019	.110	.042	.424	-.236	.060	.315	.153	.149	-.092	.213	.096	.075	.209	.185	.062	-.006	-.036	-.145	.070	-.001	.042	.138	25
26		.073	-.039	.055	.020	.281	-.129	.040	.151	.123	.079	-.094	.098	.041	.069	.229	.077	.020	.023	-.002	-.053	.021	-.015	.023	.097	26
27	1881		.017	.094	.085	.135	-.037	.012	.141	.092	.101	-.077	.040	-.029	.067	.224	.120	.030	.038	.142	-.062	-.054	.024	-.030	.071	27
28	1885	1888		-.039	.041	-.020	.049	-.005	-.057	-.004	.032	.023	.006	-.034	-.157	-.001	-.005	.002	.022	.037	.098	-.079	.032	.037	.049	28
29	1865	1868	1874		.029	.269	-.068	.025	.297	.203	.217	.107	.119	.111	.132	.158	.126	.077	.087	.018	-.038	.042	-.011	.086	.244	29
30	1887	1890	1896	1876		.058	-.018	-.014	.077	.061	.044	.059	-.024	.024	-.017	.029	.010	-.001	-.040	.065	-.071	.056	-.016	.018	.061	30
31	1855	1855	1858	1839	1860		-.112	.116	.390	.293	.166	.193	.200	.117	.089	.266	.242	.055	.138	-.070	-.020	.079	-.006	.093	.317	31
32	1882	1885	1891	1871	1893	1855		-.250	-.126	-.004	-.046	.164	.075	.084	-.014	-.004	-.098	.023	.009	-.023	.274	.046	.069	.026	-.107	32
33	1871	1874	1879	1860	1881	1844	1877		.087	-.001	.016	-.005	-.045	-.037	-.040	-.049	.013	.009	-.004	.041	-.052	.003	-.081	.027	.124	33
34	1887	1890	1896	1876	1898	1860	1893	1881		.339	.116	.220	.081	.072	.110	.161	.199	.042	.152	.014	-.049	.102	.060	.066	.219	34
35	1779	1782	1788	1772	1790	1752	1785	1781	1790		.065	.229	.141	.117	.129	.098	.109	.093	.030	-.027	.065	.112	.028	.093	.224	35
36	1887	1890	1896	1876	1898	1860	1893	1881	1898	1790		-.022	.092	.104	.050	.187	.235	.071	.069	-.038	-.055	.056	.005	.070	.009	36
37	1879	1882	1887	1868	1890	1852	1885	1873	1890	1782	1890		-.111	.257	.071	.077	.115	.078	.070	.033	.156	.260	.040	.093	.205	37
38	1876	1879	1885	1865	1887	1849	1882	1871	1887	1779	1887	1879		-.031	.005	.128	.091	.051	-.016	-.009	.068	.025	.068	.226	.027	38
39	1884	1887	1993	1873	1895	1857	1890	1879	1895	1787	1895	1887	1884		.114	.035	.052	.079	.035	-.081	.040	.108	.002	.049	.061	39
40	1876	1879	1884	1865	1886	1849	1881	1874	1886	1783	1886	1878	1876	1884		.102	.040	.038	.087	-.029	-.019	.028	-.016	.030	.102	40
41	1865	1868	1874	1854	1876	1839	1871	1862	1876	1776	1876	1868	1865	1873	1871		.206	.102	.167	.014	-.097	.092	.031	.051	.128	41
42	1887	1890	1896	1876	1898	1860	1893	1881	1898	1790	1898	1890	1887	1895	1886	1876		.092	.152	.001	-.126	.055	.010	.035	.095	42
43	1885	1888	1893	1874	1895	1858	1890	1879	1895	1790	1895	1887	1885	1893	1886	1876	1895		.067	-.033	.014	.014	-.003	.037	.052	43
44	1887	1890	1896	1876	1898	1860	1893	1881	1898	1790	1898	1890	1887	1895	1886	1876	1898	1895		.005	-.015	-.017	-.017	.006	.093	44
45	1860	1864	1869	1849	1871	1833	1866	1857	1871	1770	1871	1863	1860	1868	1862	1849	1871	1869	1871		-.088	-.064	-.039	.010	-.026	45
46	1887	1890	1896	1876	1898	1860	1893	1881	1898	1790	1898	1890	1887	1895	1886	1876	1898	1895	1898	1871		.036	.104	.097	-.017	46
47	1882	1886	1891	1871	1893	1855	1888	1877	1893	1785	1893	1885	1882	1890	1882	1871	1893	1891	1893	1866	1893		-.017	.122	.060	47
48	1883	1886	1891	1872	1893	1856	1889	1877	1893	1786	1893	1885	1883	1891	1882	1872	1893	1891	1893	1867	1893	1889		.114	-.040	48
49	1883	1886	1889	1870	1891	1856	1887	1875	1891	1784	1891	1883	1881	1889	1880	1870	1891	1889	1891	1865	1891	1887	1889		.062	49
50	1881	1884	1889	1870	1891	1854	1887	1875	1891	1784	1891	1883	1881	1889	1880	1870	1891	1889	1891	1865	1891	1887	1887	1885		50

Note.- In computing this matrix school data were weighted (weights B) to reproduce the national population of public senior high schools. The computer program for incomplete data was used. The lower left portion of the matrix shows the N divided by 10 for each correlation.

expenditure and rural-urban status is virtually zero. Apparently many rural and small town schools have relatively high per-pupil expenditures without having high salaries. This is one of the inefficiencies of operating small schools.

Table 6-3 describes the 50 variables in Matrix II. This matrix includes most of the items regarding the school staff plus the 19 core items that were in Matrix I.

Table 6-4 shows the correlations for Matrix II. In this matrix, it is seen that variable 41--Starting Salary, Female, correlates slightly more highly with the tests than does variable 40--Starting Salary, Male. The correlation between Starting Salary, Female and Information Total--Boys is .51. The other items correlating .15 or more with the test scores are: variables 28--Number of Full-Time Teachers This Year, 29--Number of Full-Time Teachers Last Year, 32--Number of Full-Time Teachers With the Bachelor's Degree Only, 37--Number of Teachers with Graduate Work in the Subject Taught, and 39--Whether Staff Members Have Attended a Summer Institute (in math and science) sponsored by the National Science Foundation.

Table 6-5 describes the 50 variables in Matrix III. This matrix is designed to focus primarily on the items related to school policies and philosophy.

Table 6-6 shows the correlations for Matrix III. In general, the new items in this matrix correlate much less with the test scores than do the items in the first two matrices. However, there seems to be a consistent tendency for higher test achievement to be positively associated with variables such as 28--Honor Roll, 29--Accelerated Curriculum, 31--Grades Based on Achievement, 34--Having a Summer School, 35--Summer School Offerings, 44--Homogeneous Grouping, 45--Multiple Tracks, and 49--Permitting New Work in Summer School.

Rural-urban Status

Table 6-7 shows the correlates of rural-urban status. For these correlations, rural and small town schools have been given a weight of 1 and schools in cities larger than 5,000 people have been given a weight of 0. Thus, positive correlations indicate a superiority for the urban schools.

This factor of rural-urban status has more significant correlations with more variables than any of the other school factors studied. It correlates quite substantially with the size of the senior class. Since this is true, any direct comparisons made in terms of size of school will be heavily contaminated by the indirect relationship with rural-urban status. For example, comparisons have been made of the rate at which the students in large and small schools go to college. It can be seen from the correlations in Table 6-7 that when one compares schools varying in size, one is also indirectly comparing city and rural and small town schools. It is certainly not surprising to find that the students in rural and small town areas go to college less frequently than those in urban areas. One important reason for this is that it costs a great deal more to go to college

Table 6-3
Tests, School Characteristics Questionaire and Guidance Program Questionaire Items: Means and Standard Deviations for Matrix II - School Staff

Var. No.	Item No.	Item Name	Value	M	SD	Weighted* N
1-19		Same as Table 6-1				
20	GSC-3	Accreditation, Regional	%	95.8%	20.1%	18957
21	GSC-10	Class Size, non-science & math	No. pupils	25.2	9.9	18850
22	GSC-11	Homework per day	Hours	1.7	.7	18882
23	GSC-12	Study halls	% having	92.2%	26.7%	18935
24	GSC-25	Exp. Curriculum, inter-system	%	77.5%	41.7%	18957
25	GSC-26	Experimental curriculum, local	%	63.5%	48.1%	18957
26	GSC-30	Tenure, automatic	%	41.5%	49.3%	18957
27	GSC-43	Full-time teachers, this year	No. teachers	14.5	8.7	18904
28	GSC-44	Full-time teachers, last year	No. teachers	14.1	8.7	18737
29	GSC-45	Part-time teachers	No. teachers	2.8	4.9	18149
30	GSC-46	Male teachers	%	56.3%	24.0%	18847
31	GSC-47	Teacher turnover	No. last year	2.5	2.9	18895
32	GSC-48	Teachers with BA/BS only	No. teachers	11.2	7.9	18872
33	GSC-49	Teachers with Master's only	No. teachers	9.7	7.6	18936
34	GSC-50	Teachers with Doctor's only	No. teachers	.07	.5	18933
35	GSC-51	Certified Staff	%	96.4%	30.8%	18949
36	GSC-52	Teachers in major area	%	92.8%	18.0%	18954
37	GSC-53	Graduate tng. in subj. taught	No. teachers	13.1	8.2	18890
38	GSC-54	Summer School attendance	No. teachers	5.9	4.2	18854
39	GSC-55	Summer institutes	% attending	58.2%	49.3%	18957
40	GSC-56	Starting salary-male teachers	Dollars	$3750	$652	18875
41	GSC-57	Starting salary-female teachers	Dollars	$3722	$630	18825
42	GSC-58	Teaching exp., staff average	Years	10.5	3.8	18849
43	GSC-101	Yrs. as principal-any school	Years	11.7	8.4	18934
44	GSC-102	Yrs. as principal-this school	Years	5.3	12.7	18872
45	GSC-103	Principal's age	Years	44.7	9.9	18891
46	GSC-104	Principals, male	%	97.4%	15.9%	18915
47	GSC-105	Principal's teaching exp.	Years	11.0	7.6	18895
48	GSC-106	Principals with Masters degree	%	82.7%	37.8%	18957
49	GSC-107	Principal's education courses	Credit hours	45.6	5.2	18891
50	GSC-108	Principal's honorary degrees	% having	3.7%	18.9%	18957

*Weight B used to reproduce pub

Table 6-4

Matrix II. Correlations of School Characteristics Items and Selected Test Means for 10th Grade (Public Senior High Schools)

School Staff Matrix

VARIABLE NUMBER	INFORMATION TEST--BOYS (R-190) 1	INFORMATION TEST--GIRLS (R-190) 2	ENGLISH TOTAL (R-230) 3	MATHEMATICS TEST--TOTAL (R-340) 4	READING COMPREHENSION (R-250) 5	CREATIVITY TEST (R-260) 6	TYPE OF SCHOOL 7	GRADE STRUCTURE 8	CLASS SIZE--SCI. & MATH 9	ABSENTEE RATE 10	DROP-OUT--BOYS 11	COLLEGE--BOYS 12	PERCENT JUNIOR COLLEGE 13	PERCENT REMEDIAL READING 14	HOUSING QUALITY 15	RURAL-URBAN 16	PER PUPIL EXPENDITURE 17	YEARS AS PRINCIPAL 18	SENIOR CLASS SIZE 19	ACCREDITATION 20	SIZE OF CLASS, NON-SCIENCE 21	AMOUNT OF HOMEWORK PER DAY 22	STUDY HALLS 23	EXP. CURRICULUM, INTER-SYSTEM 24	EXP. CURRICULUM, LOCAL 25	VARIABLE NUMBER
1		.881	.889	.872	.915	.865	.113	-.147	-.140	-.368	-.155	.330	.017	-.016	.385	.166	.358	-.048	.188	-.030	-.065	.062	.023	.052	.082	1
2	1871		.846	.867	.879	.828	.039	-.115	-.225	-.371	-.209	.319	.046	-.042	.372	.083	.419	-.076	.109	-.057	-.139	.033	.028	.031	.040	2
3	1872	1853		.884	.917	.829	.139	-.133	-.117	-.360	-.137	.291	.052	-.049	.361	.128	.236	-.030	.132	.006	-.057	.037	.085	-.003	.059	3
4	1811	1793	1811		.881	.820	.088	-.124	-.146	-.343	-.177	.311	.036	-.009	.379	.110	.318	-.017	.141	-.023	-.095	.079	.069	.046	.080	4
5	1872	1853	1877	1811		.904	.106	-.172	-.144	-.335	-.177	.341	.042	-.008	.382	.169	.314	-.055	.197	-.035	-.059	.067	.046	.025	.086	5
6	1872	1853	1877	1811	1877		.079	-.148	-.184	-.339	-.192	.305	.033	-.007	.369	.138	.374	-.080	.164	-.046	-.106	.014	.005	.024	.079	6
7	1872	1854	1858	1797	1858	1858		.035	.080	-.033	-.029	-.043	.019	-.025	.078	-.067	-.122	.005	.051	.131	.066	-.024	.197	.009	.018	7
8	1872	1854	1858	1797	1858	1858	1896		-.322	-.114	-.054	-.147	.019	-.172	-.199	-.432	-.041	-.002	-.407	.082	-.213	-.105	.190	-.088	-.163	8
9	1863	1845	1850	1788	1850	1850	1887	1887		.291	.203	-.020	-.057	.085	.041	.398	-.333	.143	.414	.013	.521	.129	-.117	.034	.141	9
10	1870	1852	1856	1795	1856	1856	1893	1893	1885		.232	-.148	-.023	.058	-.096	.089	-.162	.001	.114	-.031	.218	.033	-.023	-.010	.028	10
11	1866	1847	1852	1791	1852	1852	1878	1878	1870	1876		-.104	-.062	.047	-.094	.105	-.171	.069	.145	.007	.126	.065	-.060	.060	.031	11
12	1850	1832	1842	1780	1842	1842	1862	1862	1854	1860	1858		.179	.094	.245	.208	.198	.024	.247	-.034	-.036	.183	-.105	.089	.125	12
13	1854	1835	1845	1786	1845	1845	1868	1868	1859	1865	1861	1856		.044	.022	-.019	.093	-.014	.002	-.089	-.063	.037	-.121	-.017	-.047	13
14	1858	1839	1844	1783	1844	1844	1881	1881	1872	1879	1864	1848	1855		.008	.139	.100	.046	.180	-.128	.136	.074	-.162	.042	.107	14
15	1872	1854	1858	1797	1858	1858	1896	1896	1887	1893	1878	1862	1868	1881		.227	.126	.052	.231	-.029	.063	.036	-.012	.014	.106	15
16	1872	1854	1858	1797	1858	1858	1896	1896	1887	1893	1878	1862	1868	1881	1896		-.012	.153	.575	-.051	.261	.141	-.158	.159	.231	16
17	1781	1762	1767	1708	1767	1767	1804	1804	1796	1802	1787	1771	1778	1792	1804	1804		-.063	.036	-.187	-.146	-.060	-.142	.121	.126	17
18	1870	1851	1856	1795	1856	1856	1893	1893	1885	1891	1876	1860	1865	1879	1893	1893	1802		.123	-.033	.051	-.030	.060	.045	.049	18
19	1852	1833	1843	1784	1843	1843	1863	1863	1854	1861	1858	1851	1856	1851	1863	1863	1776	1861		-.091	.222	.171	-.123	.239	.298	19
20	1872	1854	1858	1797	1858	1858	1896	1896	1887	1893	1878	1862	1868	1881	1896	1896	1804	1893	1863		.037	-.025	.252	-.037	-.022	20
21	1861	1843	1847	1786	1847	1847	1885	1885	1883	1885	1867	1852	1857	1870	1885	1885	1794	1883	1852	1885		.073	-.126	.001	.059	21
22	1865	1846	1851	1790	1851	1851	1888	1888	1880	1888	1871	1855	1860	1874	1888	1888	1797	1886	1856	1888	1879		-.004	.114	.081	22
23	1870	1851	1856	1795	1856	1856	1894	1894	1885	1891	1876	1860	1865	1879	1894	1894	1802	1891	1861	1894	1883	1886		-.124	-.112	23
24	1872	1854	1858	1797	1858	1858	1896	1896	1887	1893	1878	1862	1868	1881	1896	1896	1804	1893	1863	1896	1885	1888	1894		.433	24
25	1872	1854	1858	1797	1858	1858	1896	1896	1887	1893	1878	1862	1868	1881	1896	1896	1804	1893	1863	1896	1885	1888	1894	1896		25
26	1872	1854	1858	1797	1858	1858	1896	1896	1887	1893	1878	1862	1868	1881	1896	1896	1804	1893	1863	1896	1885	1888	1894	1896	1896	26
27	1867	1848	1853	1792	1853	1853	1890	1890	1882	1888	1873	1857	1862	1876	1890	1890	1799	1888	1858	1890	1880	1883	1888	1890	1890	27
28	1850	1832	1836	1775	1836	1836	1874	1874	1865	1872	1856	1841	1846	1859	1874	1874	1784	1871	1841	1874	1863	1866	1871	1874	1874	28
29	1792	1773	1778	1717	1778	1778	1815	1815	1808	1813	1798	1782	1787	1808	1815	1815	1728	1813	1783	1815	1806	1807	1813	1815	1815	29
30	1861	1843	1847	1786	1847	1847	1885	1885	1876	1883	1867	1852	1857	1870	1885	1885	1795	1882	1852	1885	1874	1877	1882	1885	1885	30
31	1866	1848	1852	1791	1852	1852	1890	1890	1881	1887	1872	1857	1862	1875	1890	1890	1798	1887	1857	1890	1879	1882	1887	1890	1890	31
32	1863	1845	1850	1789	1850	1850	1887	1887	1879	1885	1870	1854	1859	1873	1887	1887	1798	1885	1854	1887	1876	1880	1885	1887	1887	32
33	1870	1852	1856	1795	1856	1856	1894	1894	1885	1893	1876	1860	1866	1879	1894	1894	1802	1891	1861	1894	1885	1888	1891	1894	1894	33
34	1870	1851	1856	1795	1856	1856	1893	1893	1885	1891	1876	1860	1865	1879	1893	1893	1804	1891	1861	1893	1883	1886	1891	1893	1893	34
35	1872	1853	1858	1797	1858	1858	1895	1895	1886	1893	1878	1862	1867	1880	1895	1895	1804	1893	1863	1895	1984	1887	1893	1895	1895	35
36	1872	1854	1858	1797	1858	1858	1895	1895	1887	1893	1878	1862	1868	1881	1895	1895	1804	1893	1863	1895	1885	1888	1893	1895	1895	36
37	1866	1847	1852	1791	1852	1852	1889	1889	1880	1887	1872	1856	1861	1875	1889	1889	1798	1887	1857	1889	1878	1881	1887	1889	1889	37
38	1862	1844	1848	1789	1848	1848	1885	1885	1877	1883	1868	1852	1860	1871	1885	1885	1796	1883	1855	1885	1875	1878	1883	1885	1885	38
39	1872	1854	1858	1797	1858	1858	1896	1896	1887	1893	1878	1862	1868	1881	1896	1896	1804	1893	1863	1896	1885	1888	1894	1896	1896	39
40	1864	1845	1850	1791	1850	1850	1888	1888	1879	1885	1870	1854	1859	1873	1888	1888	1798	1885	1855	1888	1877	1880	1885	1888	1888	40
41	1859	1847	1845	1786	1845	1845	1882	1882	1874	1880	1865	1849	1854	1870	1882	1882	1791	1880	1850	1882	1872	1875	1880	1882	1882	41
42	1862	1843	1849	1788	1849	1849	1885	1885	1876	1883	1868	1852	1857	1871	1885	1885	1794	1883	1853	1885	1874	1877	1883	1885	1885	42
43	1870	1851	1856	1795	1856	1856	1893	1893	1885	1891	1876	1860	1865	1879	1893	1893	1802	1893	1861	1893	1883	1886	1891	1893	1893	43
44	1864	1845	1850	1789	1850	1850	1887	1887	1879	1885	1870	1854	1859	1873	1887	1887	1798	1887	1855	1887	1877	1880	1885	1887	1887	44
45	1865	1847	1852	1790	1852	1852	1889	1889	1881	1889	1872	1856	1861	1874	1889	1889	1798	1889	1856	1889	1880	1884	1887	1889	1889	45
46	1868	1849	1854	1793	1854	1854	1891	1891	1883	1889	1874	1858	1863	1877	1891	1891	1800	1891	1859	1891	1881	1884	1889	1891	1891	46
47	1866	1847	1852	1791	1852	1852	1889	1889	1881	1889	1872	1856	1861	1875	1889	1889	1798	1889	1857	1889	1881	1884	1887	1889	1889	47
48	1872	1854	1858	1797	1858	1858	1896	1896	1887	1893	1878	1862	1868	1881	1896	1896	1804	1893	1863	1896	1885	1888	1894	1896	1896	48
49	1866	1847	1852	1791	1852	1852	1889	1889	1881	1889	1872	1856	1861	1874	1889	1889	1798	1887	1857	1889	1880	1884	1887	1889	1889	49
50	1872	1854	1858	1797	1858	1858	1896	1896	1887	1893	1878	1862	1868	1881	1896	1896	1804	1893	1863	1896	1885	1888	1894	1896	1896	50

Note.- In computing this matrix school data were weighted (weights B) to reproduce the national population of public senior high schools. The computer program for incomplete data was used. The lower left portion of the matrix shows the N divided by 10 for each correlation.

Table 6-4 (continued)

Matrix II. Correlations of School Characteristics Items and Selected Test Means for 10th Grade (Public Senior High Schools)

School Staff Matrix

VARIABLE NUMBER	26 TENURE	27 NO. FULL-TIME TEACHERS THIS YR.	28 NO. FULL-TIME TEACHERS LAST YR.	29 NO. REGULAR PART-TIME TEACHERS	30 PERCENT MEN TEACHERS	31 TEACHER TURNOVER	32 NO. BACHELOR'S DEGREE ONLY	33 NO. MASTER'S DEGREE ONLY	34 NO. DOCTOR'S DEGREE	35 PERCENT STAFF CERTIFIED	36 PERCENT TEACHING IN MAJOR AREA	37 GRAD. TNG. IN SUBJECTS TAUGHT	38 NO. ATTENDING SUMMER SCHOOL	39 NO. ATTENDING SUMMER INSTITUTES	40 STARTING SALARY--MEN	41 STARTING SALARY--WOMEN	42 AVG. TEACHING EXPERIENCE	43 YRS. A PRINCIPAL--ANY SCHOOL	44 YRS. A PRINCIPAL--THIS SCHOOL	45 PRINCIPAL'S AGE	46 PRINCIPAL'S SEX	47 PRINCIPAL'S TEACHING EXPERIENCE	48 PRIN'S. HIGHEST EARNED DEGREE	49 PRIN'S. EDUC. COURSE CREDITS	50 PRINCIPAL'S HONORARY DEGREES	VARIABLE NUMBER
1	.063	.296	.300	.126	.085	.108	.190	.264	.013	-.056	-.066	.246	.118	.157	.487	.505	-.012	-.048	-.057	-.012	-.015	.015	.025	.067	-.085	1
2	.012	.216	.219	.066	.113	.073	.115	.195	-.013	-.087	-.105	.171	.061	.085	.521	.529	-.108	-.076	-.103	-.043	-.073	.008	.033	.041	-.117	2
3	.052	.249	.249	.078	-.007	.077	.146	.213	-.028	-.077	-.071	.188	.041	.106	.378	.392	-.013	-.030	-.067	-.017	.003	.025	.023	.047	-.081	3
4	.021	.231	.236	.065	-.001	.067	.129	.216	-.009	-.095	-.053	.207	.077	.133	.421	.417	-.064	-.017	-.041	-.013	-.008	.002	.035	.049	-.068	4
5	.071	.299	.303	.109	.045	.114	.196	.274	.006	-.080	-.077	.249	.108	.158	.465	.489	-.042	-.055	-.099	-.032	-.019	.025	.060	.072	-.087	5
6	.041	.255	.264	.104	.101	.087	.168	.238	-.000	-.092	-.066	.205	.084	.125	.495	.513	-.092	-.080	-.087	-.030	-.019	.025	.064	.043	-.073	6
7	-.026	.046	.040	-.008	-.091	.060	.090	-.018	-.024	-.013	.099	.013	.034	.016	-.026	.014	.099	.005	.023	-.056	-.034	-.035	.002	.045	-.033	7
8	-.274	-.574	-.582	-.128	-.028	-.234	-.480	-.492	-.096	.024	.045	-.488	-.329	-.296	-.176	-.191	-.163	-.002	.012	-.074	-.019	-.124	-.171	-.112	.003	8
9	.183	.516	.512	.097	-.133	.219	.467	.381	.092	-.002	.181	.408	.269	.321	-.094	-.101	.215	.143	.177	.152	-.001	.043	.208	.095	-.033	9
10	.036	.115	.107	-.014	-.027	.138	.134	.097	.095	.043	.079	.099	.107	.067	-.168	-.173	-.039	.001	.009	-.006	-.002	-.035	.029	-.040	.059	10
11	.064	.091	.107	-.031	-.089	.080	.104	.124	.043	-.045	.076	.089	.156	.096	-.153	-.163	.050	.069	.076	.038	.059	.060	.018	-.019	.060	11
12	.023	.216	.240	.150	.022	.095	.168	.279	.020	-.018	-.063	.247	.179	.118	.204	.221	.028	.024	.013	.037	-.031	.030	.096	.061	.030	12
13	-.165	-.014	.001	.026	.030	.003	-.031	.014	-.009	-.037	-.070	.041	.021	-.028	.080	.060	-.064	-.014	.012	-.101	.026	-.092	-.054	-.021	-.041	13
14	.098	.205	.219	.061	.019	.083	.175	.199	.033	.009	.042	.230	.176	.065	.165	.176	.011	.046	.030	.067	.002	.069	.116	.104	.059	14
15	.070	.307	.320	.072	.005	.114	.250	.267	.005	-.023	.015	.279	.174	.186	.257	.245	.020	.052	.013	.032	.001	.040	.128	.070	-.039	15
16	.228	.680	.679	.182	-.024	.266	.612	.635	.110	.024	.127	.611	.447	.343	.204	.216	.204	.153	.125	.240	.015	.185	.213	.103	.047	16
17	-.010	.019	.026	.095	.224	-.018	-.032	.111	.064	-.005	-.101	.107	.050	-.011	.566	.583	-.179	-.063	-.067	.028	-.005	.087	.034	.016	-.047	17
18	.027	.118	.120	-.007	-.072	.024	.091	.099	.010	-.007	.052	.102	.056	.111	-.036	-.047	.225	1.000	.682	.698	.043	.260	.042	.061	.028	18
19	.291	.678	.662	.201	-.045	.436	.662	.771	.275	.007	.091	.673	.695	.332	.270	.295	.248	.123	.057	.220	.019	.207	.181	.095	.011	19
20	-.035	-.068	-.072	.003	-.133	-.020	-.044	-.074	-.102	.053	-.022	-.103	-.113	-.034	-.187	-.194	.092	-.033	.008	-.080	.015	-.072	.024	.050	.009	20
21	.145	.325	.320	.042	-.086	.108	.286	.226	.045	-.028	.136	.269	.136	.213	-.095	-.094	.099	.051	.102	.078	-.015	.024	.144	.103	-.009	21
22	.045	.163	.178	.017	-.134	.077	.167	.151	.038	-.011	.056	.175	.163	.137	-.076	-.030	.040	-.030	.024	-.033	.024	-.030	.091	.038	-.009	22
23	-.039	-.181	-.180	-.082	-.167	-.093	-.171	-.158	-.106	-.067	.003	-.219	-.162	-.111	-.150	-.161	.013	.060	-.015	-.011	-.016	-.016	-.015	-.040	.051	23
24	.099	.192	.197	.070	-.003	.114	.180	.263	.111	-.018	.011	.243	.268	.108	.068	.080	.043	.045	.034	.030	.012	.014	.091	.027	.021	24
25	.118	.295	.301	.102	.001	.140	.278	.314	.119	.026	.045	.341	.271	.149	.131	.132	.073	.049	.047	.055	-.000	.044	.093	.009	.033	25
26		.353	.334	.086	-.036	.121	.277	.326	.124	-.000	.040	.286	.194	.173	.107	.151	.131	.027	.046	.151	-.017	.188	.161	.076	.093	26
27	1890		.968	.239	-.035	.374	.833	.796	.138	-.001	.149	.827	.543	.453	.286	.309	.255	.118	.086	.206	-.032	.183	.294	.133	-.005	27
28	1874	1868		.223	-.082	.358	.824	.806	.081	-.082	.161	.831	.542	.462	.277	.300	.257	.120	.084	.207	-.059	.192	.289	.116	.006	28
29	1815	1810	1803		.158	.103	.216	.225	.101	.144	.038	.215	.190	.145	.140	.148	.120	-.007	.006	.061	.007	.072	.072	.009	-.054	29
30	1885	1879	1863	1813		.162	-.034	-.070	.385	.525	-.096	.018	.118	-.050	.320	.319	-.218	-.072	-.023	-.032	.085	.031	-.062	-.016	.017	30
31	1890	1884	1868	1815	1879		.393	.344	.257	.180	-.025	.325	.434	.175	.132	.142	-.054	.024	-.058	.061	.061	.113	.147	.063	.071	31
32	1887	1882	1865	1806	1876	1881		.624	.110	.039	.120	.701	.544	.388	.220	.245	.189	.091	.064	.148	-.001	.156	.226	.144	-.003	32
33	1894	1888	1872	1813	1883	1888	1885		.142	-.059	.135	.813	.619	.389	.315	.347	.299	.099	.051	.215	-.029	.219	.260	.099	.011	33
34	1893	1888	1872	1815	1883	1887	1885	1891		.482	.001	.146	.243	.074	.131	.128	.028	.010	.017	.053	.127	.034	.059	.025	.016	34
35	1895	1890	1873	1814	1884	1889	1887	1893	1893		.066	.027	.134	.003	.018	.016	.084	-.007	.016	.023	.162	.053	.026	.036	-.016	35
36	1895	1890	1874	1815	1885	1890	1887	1893	1893	1895		.168	.094	.148	-.117	-.090	.076	.052	.083	.141	-.100	.082	.150	-.015	.002	36
37	1889	1884	1867	1808	1878	1883	1881	1887	1887	1888	1889		.610	.425	.332	.351	.257	.102	.108	.192	.015	.177	.248	.122	-.016	37
38	1885	1880	1874	1810	1875	1879	1877	1883	1883	1885	1885	1879		.314	.254	.267	.114	.056	.013	.145	.035	.144	.138	.101	.015	38
39	1896	1890	1874	1815	1885	1890	1887	1894	1893	1895	1895	1889	1885		.069	.097	.133	.111	.085	.158	-.019	.101	.224	.024	-.024	39
40	1888	1882	1865	1807	1876	1881	1879	1885	1885	1887	1887	1881	1877	1888		.957	-.110	-.036	-.040	.071	.040	.093	.049	.082	-.059	40
41	1882	1877	1860	1804	1871	1876	1874	1880	1880	1882	1882	1876	1872	1882	1878		-.139	-.047	-.052	.068	.016	.103	.097	.096	-.071	41
42	1885	1880	1863	1804	1874	1879	1876	1883	1883	1884	1885	1879	1875	1885	1877	1872		.225	.185	.289	.068	.226	.057	-.004	.004	42
43	1893	1888	1871	1813	1882	1887	1885	1891	1891	1893	1893	1887	1883	1893	1885	1880	1883		.682	.688	.043	.260	.042	.061	.028	43
44	1887	1882	1865	1806	1876	1881	1879	1885	1885	1886	1887	1881	1877	1887	1879	1874	1876	1887		.558	.072	.029	.037	-.007	.013	44
45	1889	1884	1867	1808	1878	1883	1881	1889	1887	1888	1889	1882	1879	1889	1881	1876	1878	1889	1883		.126	.595	.063	.029	.059	45
46	1891	1886	1869	1813	1880	1885	1883	1889	1889	1891	1891	1885	1881	1891	1883	1878	1881	1891	1885	1887		.114	-.087	-.043	-.027	46
47	1889	1884	1867	1809	1878	1883	1881	1889	1887	1889	1889	1883	1879	1889	1881	1876	1879	1889	1883	1887	1887		.125	.070	.099	47
48	1896	1890	1874	1815	1885	1890	1887	1894	1893	1895	1895	1889	1885	1896	1888	1882	1885	1893	1887	1889	1891	1889		.337	-.064	48
49	1889	1884	1867	1808	1878	1883	1881	1889	1887	1888	1889	1882	1879	1889	1881	1876	1878	1887	1881	1885	1885	1885	1889		-.060	49
50	1896	1890	1874	1815	1885	1890	1887	1894	1893	1895	1895	1889	1885	1896	1888	1882	1885	1893	1887	1889	1891	1889	1896	1889		50

Note.- In computing this matrix school data were weighted (weights B) to reproduce the national population of public senior high schools. The computer program for incomplete data was used. The lower left portion of the matrix shows the N divided by 10 for each correlation.

Table 6-5

Tests, School Characteristics Questionaire, and Guidance Program Questionnaire Items: Means and Standard Deviations for Matrix III - School Policies and Philosophy

Var. No.	Item No.	Item Name	Value	M	SD	Weighted* N
1-19		Same as Table 6-1				
20	GSC-4	Mid-year admission, first grade	% permitting	2.5%	15.5%	18977
21	GSC-5	Mid-year promotion	% permitting	7.3%	30.3%	18956
22	GSC-6	School year length	Days	179.4	6.5	18763
23	GSC-7	Class periods per day	No. periods	6.5	1.0	18956
24	GSC-9	Class size - science & math	No. students	22.8	6.2	18892
25	GSC-10	Class size - other	No. students	25.2	9.9	18870
26	GSC-11	Homework expected	Hours/Day	1.7	0.7	18902
27	GSC-12	Study halls	% having	92.3%	26.7%	18955
28	GSC-14-3	Honor societies in school	% having	76.1%	42.7%	18883
29	GSC-15-7	Accelerated curriculum	% having	37.9%	48.5%	18760
30	GSC-16	CEEB Advanced placement	% using	1.7%	12.8%	18977
31	GSC-17	Grade represent achievement	%	49.4%	50.0%	18977
32	GSC-18-2	Numerical grades	% using	77.3%	41.9%	18977
33	GSC-19	Class assignment by tests	% using	3.1%	17.2%	18977
34	GSC-20	Summer School - new work	% permitting	7.9%	26.9%	18977
35	GSC-21	Summer School	% having	26.7%	44.3%	18977
36	GSC-22	Adult education	% having	52.7%	49.9%	18977
37	GSC-23	Religious education	% having	22.8%	41.9%	18977
38	GSC-24	2 yrs. of foreign lang. req. for graduation	%	49.3%	50.0%	14717
39	GSC-25	Exp. curriculum, inter-system	% having	22.4%	41.7%	18977
40	GSC-26	Exp. curriculum, local	% having	36.5%	48.2%	18977
41	GSC-30	Tenure automatic	%	41.5%	49.3%	18977
42	GSC-31-4	Need more teachers	% needing	54.1%	49.8%	18370
43	GSC-37	Mid-year graduation	% permitting	3.1%	17.2%	18977
44	GSC-39	Homogeneous grouping	% having	54.0%	49.8%	18977
45	GSC-40	Track system	% having	51.9%	50.0%	18977
46	GSC-41	Acceleration policy	% having	29.1%	45.4%	18977
47	GSC-42	Failing slow learners-must repeat grade	% requiring	32.6%	46.9%	18977
48	GSC-56	Starting salary-male teachers	Dollars	$3501	$652	18895
49	GSC-81	Summer - new work	% permitting	52.7%	49.9%	18977
50	GSC-82	Double shifts	% of pupils	0.5%	8.1%	18953

* Weight B used to reproduce public high school population

Table 6-6

Matrix III. Correlations of School Characteristics Items and Selected Test Means for 10th Grade (Public Senior High Schools)

School Policies and Philosophy Matrix

VARIABLE NUMBER	1 INFORMATION TEST--BOYS (R-190)	2 INFORMATION TEST--GIRLS (R-190)	3 ENGLISH TOTAL (R-230)	4 MATHEMATICS TEST--TOTAL (R-340)	5 READING COMPREHENSION (R-250)	6 CREATIVITY TEST (R-260)	7 TYPE OF SCHOOL	8 GRADE STRUCTURE	9 CLASS SIZE--SCI. & MATH	10 ABSENTEE RATE	11 DROP-OUT--BOYS	12 COLLEGE--BOYS	13 PERCENT JUNIOR COLLEGE	14 PERCENT REMEDIAL READING	15 HOUSING QUALITY	16 RURAL-URBAN	17 PER PUPIL EXPENDITURE	18 YEARS AS PRINCIPAL	19 SENIOR CLASS SIZE	20 MID-YEAR ADMISSION TO GR. 1	21 MID-YEAR PROMOTION	22 NO. DAYS IN SCHOOL YEAR	23 NO. CLASS PERIODS PER DAY	24 CLASS SIZE--SCI. & MATH	25 CLASS SIZE--OTHER	VARIABLE NUMBER
1		.881	.889	.872	.915	.865	.113	-.147	-.140	-.368	-.155	.330	.017	-.016	.384	.165	.358	-.048	.187	-.070	-.051	.169	.212	-.140	-.068	1
2	1873		.846	.867	.879	.828	.039	-.116	-.224	-.371	-.210	.319	.046	-.043	.372	.083	.419	-.075	.109	-.088	-.053	.146	.269	-.224	-.139	2
3	1874	1855		.884	.917	.829	.139	-.133	-.116	-.360	-.138	.291	.052	-.049	.361	.128	.236	-.029	.132	-.096	-.085	.114	.138	-.116	-.057	3
4	1813	1795	1813		.881	.820	.088	-.124	-.146	-.343	-.177	.311	.036	-.009	.379	.109	.318	-.017	.141	-.110	-.076	.121	.198	-.146	-.094	4
5	1874	1855	1879	1813		.904	.106	-.172	-.143	-.335	-.177	.341	.042	-.008	.382	.169	.314	-.054	.197	-.099	-.086	.149	.156	-.143	-.059	5
6	1874	1855	1879	1813	1879		.079	-.148	-.184	-.339	-.192	.305	.033	-.007	.368	.138	.374	-.080	.164	-.092	-.079	.161	.158	-.184	-.106	6
7	1874	1856	1860	1799	1860	1860		.035	.080	-.033	-.029	-.043	.019	-.025	.078	-.066	-.122	.006	.051	.012	.033	-.054	-.057	.080	.067	7
8	1874	1856	1860	1799	1860	1860	1898		-.323	-.113	-.053	-.147	.020	-.171	-.200	-.433	-.040	-.003	-.407	-.027	-.039	-.066	.053	-.323	-.213	8
9	1865	1847	1852	1790	1852	1852	1889	1889		.290	.202	-.019	-.058	.084	.042	.399	-.333	.146	.416	.127	.041	.063	-.178	1.000	.522	9
10	1872	1854	1858	1797	1858	1858	1895	1895	1887		.232	-.148	-.023	.058	-.096	.088	-.162	.000	.114	-.011	.018	.035	-.088	.290	.218	10
11	1868	1849	1854	1793	1854	1854	1880	1880	1872	1878		-.104	-.061	.048	-.094	.104	-.171	.067	.144	.082	.090	.022	-.053	.202	.125	11
12	1852	1834	1844	1782	1844	1844	1864	1864	1856	1862	1860		.179	.094	.245	.208	.198	.025	.247	-.037	.014	.110	.012	-.019	-.036	12
13	1856	1837	1847	1788	1847	1847	1870	1870	1861	1867	1863	1858		.044	.022	-.019	.093	-.015	.001	-.007	.064	-.002	-.036	-.058	-.064	13
14	1860	1841	1846	1785	1846	1846	1883	1883	1874	1881	1866	1850	1857		.008	.139	.100	.045	.179	.045	.054	.087	-.058	.084	.136	14
15	1874	1856	1860	1799	1860	1860	1898	1898	1889	1895	1880	1864	1870	1883		.228	.126	.053	.232	-.047	-.037	.035	.025	.042	.063	15
16	1874	1856	1860	1799	1860	1860	1898	1898	1889	1895	1880	1864	1870	1883	1898		-.012	.155	.576	.100	.128	.162	-.080	.399	.262	16
17	1783	1764	1769	1710	1769	1769	1806	1806	1798	1804	1789	1773	1780	1794	1806	1806		-.064	.035	.015	.062	.151	.311	-.333	-.146	17
18	1872	1853	1858	1797	1858	1858	1895	1895	1887	1893	1878	1862	1867	1881	1895	1895	1804		.125	.045	.076	.038	-.076	.146	.053	18
19	1854	1835	1845	1786	1845	1845	1865	1865	1856	1863	1860	1853	1858	1853	1865	1865	1778	1863		.165	.269	.274	-.045	.416	.223	19
20	1874	1856	1860	1799	1860	1860	1898	1898	1889	1895	1880	1864	1870	1883	1898	1898	1806	1895	1865		.357	.076	-.026	.127	.078	20
21	1872	1853	1858	1797	1858	1858	1896	1896	1887	1893	1878	1862	1867	1881	1896	1896	1804	1893	1863	1896		.068	.006	.041	.018	21
22	1855	1837	1841	1780	1841	1841	1876	1876	1868	1874	1859	1844	1851	1862	1876	1876	1785	1874	1844	1876	1874		.051	.063	.206	22
23	1872	1853	1858	1797	1858	1858	1896	1896	1887	1893	1878	1862	1867	1881	1896	1896	1804	1893	1863	1896	1893	1874		-.178	-.130	23
24	1865	1847	1852	1790	1852	1852	1889	1889	1889	1887	1872	1856	1861	1874	1889	1889	1798	1887	1856	1889	1887	1868	1887		.522	24
25	1863	1845	1849	1788	1849	1849	1887	1887	1885	1887	1869	1854	1859	1872	1887	1887	1796	1885	1854	1887	1885	1866	1885	1885		25
26	1867	1848	1853	1792	1853	1853	1890	1890	1882	1890	1873	1857	1862	1876	1890	1890	1799	1888	1858	1890	1888	1869	1888	1882	1881	26
27	1872	1853	1858	1797	1858	1858	1896	1896	1887	1893	1878	1862	1867	1881	1896	1896	1804	1893	1863	1896	1893	1874	1893	1887	1885	27
28	1864	1846	1851	1789	1851	1851	1888	1888	1880	1886	1871	1855	1860	1874	1888	1888	1797	1886	1855	1888	1886	1869	1886	1880	1878	28
29	1852	1834	1839	1777	1839	1839	1876	1876	1867	1874	1859	1843	1848	1861	1876	1876	1787	1874	1843	1876	1874	1855	1874	1867	1865	29
30	1874	1856	1860	1799	1860	1860	1898	1898	1889	1895	1880	1864	1870	1883	1898	1898	1806	1895	1865	1898	1896	1876	1896	1889	1887	30
31	1874	1856	1860	1799	1860	1860	1898	1898	1889	1895	1880	1864	1870	1883	1898	1898	1806	1895	1865	1898	1896	1876	1896	1889	1887	31
32	1874	1856	1860	1799	1860	1860	1898	1898	1889	1895	1880	1864	1870	1883	1898	1898	1806	1895	1865	1898	1896	1876	1896	1889	1887	32
33	1874	1856	1860	1799	1860	1860	1898	1898	1889	1895	1880	1864	1870	1883	1898	1898	1806	1895	1865	1898	1896	1876	1896	1889	1887	33
34	1874	1856	1860	1799	1860	1860	1898	1898	1889	1895	1880	1864	1870	1883	1898	1898	1806	1895	1865	1898	1896	1876	1896	1889	1887	34
35	1874	1856	1860	1799	1860	1860	1898	1898	1889	1895	1880	1864	1870	1883	1898	1898	1806	1895	1865	1898	1896	1876	1896	1889	1887	35
36	1874	1856	1860	1799	1860	1860	1898	1898	1889	1895	1880	1864	1870	1883	1898	1898	1806	1895	1865	1898	1896	1876	1896	1889	1887	36
37	1874	1856	1860	1799	1860	1860	1898	1898	1889	1895	1880	1864	1870	1883	1898	1898	1806	1895	1865	1898	1896	1876	1896	1889	1887	37
38	1451	1440	1437	1395	1437	1437	1472	1472	1465	1471	1454	1444	1446	1465	1472	1472	1406	1472	1444	1472	1469	1452	1470	1465	1465	38
39	1874	1856	1860	1799	1860	1860	1898	1898	1889	1895	1880	1864	1870	1883	1898	1898	1806	1895	1865	1898	1896	1876	1896	1889	1887	39
40	1874	1856	1860	1799	1860	1860	1898	1898	1889	1895	1880	1864	1870	1883	1898	1898	1806	1895	1865	1898	1896	1876	1896	1889	1887	40
41	1874	1856	1860	1799	1860	1860	1898	1898	1889	1895	1880	1864	1870	1883	1898	1898	1806	1895	1865	1898	1896	1876	1896	1889	1887	41
42	1813	1800	1799	1740	1799	1799	1837	1837	1828	1835	1819	1804	1809	1822	1837	1837	1746	1835	1804	1837	1837	1816	1835	1828	1826	42
43	1874	1856	1860	1799	1860	1860	1898	1898	1889	1895	1880	1864	1870	1883	1898	1898	1806	1895	1865	1898	1896	1876	1896	1889	1887	43
44	1874	1856	1860	1799	1860	1860	1898	1898	1889	1895	1880	1864	1870	1883	1898	1898	1806	1895	1865	1898	1896	1876	1896	1889	1887	44
45	1874	1856	1860	1799	1860	1860	1898	1898	1889	1895	1880	1864	1870	1883	1898	1898	1806	1895	1865	1898	1896	1876	1896	1889	1887	45
46	1874	1856	1860	1799	1860	1860	1898	1898	1889	1895	1880	1864	1870	1883	1898	1898	1806	1395	1865	1893	1896	1876	1896	1889	1887	46
47	1874	1856	1860	1799	1860	1860	1898	1898	1889	1895	1880	1864	1870	1883	1898	1898	1806	1895	1865	1898	1896	1876	1896	1889	1887	47
48	1866	1847	1852	1793	1852	1852	1890	1890	1881	1887	1872	1856	1861	1875	1890	1890	1800	1887	1857	1890	1887	1868	1887	1881	1879	48
49	1874	1856	1860	1799	1860	1860	1898	1898	1889	1895	1880	1864	1870	1883	1898	1898	1806	1895	1865	1898	1896	1876	1896	1889	1887	49
50	1872	1853	1858	1797	1858	1858	1895	1895	1887	1893	1878	1862	1870	1883	1895	1895	1804	1893	1863	1895	1893	1874	1893	1887	1885	50

Note.- In computing this matrix school data were weighted (weights B) to reproduce the national population of public senior high schools. The computer program for incomplete data was used. The lower left portion of the matrix shows the N divided by 10 for each correlation.

Table 6-6 (continued)

Matrix III. Correlations of School Characteristics Items and Selected Test Means for 10th Grade (Public Senior High Schools)

School Policies and Philosophy Matrix

VARIABLE NUMBER	HOMEWORK EXPECTED 26	STUDY HALLS 27	HONOR ROLL 28	ACCELERATED CURRICULUM 29	ADVANCED PLACEMENT 30	GRADE MEANING 31	NUMERICAL GRADES 32	ASSIGNMENT TO CLASSES 33	SUMMER SCHOOL POLICY 34	SUMMER SCHOOL OFFERINGS 35	ADULT EDUCATION 36	RELIGIOUS EDUCATION 37	FOR. LANG. REQ. FOR GRAD'N 38	EXP. CURRICULUM, INTER-SYSTEM 39	EXP. CURRICULUM, LOCAL 40	TENURE 41	NEED FOR ADD'L TEACHERS 42	MID-YEAR GRADUATION 43	HOMOGENEOUS GROUPING 44	TRACKS 45	ACCELERATION POLICY 46	PROMOTION OF SLOW LEARNERS 47	STARTING SALARY--MEN 48	SUMMER--NEW WORK 49	DOUBLE SHIFT--% STUDENTS 50	VARIABLE NUMBER
1	.-62	.023	.109	.162	.041	.132	-.049	.011	.113	.161	-.090	.066	-.055	.052	.082	.063	-.022	.002	.139	.210	.038	-.146	.487	.151	.066	1
2	.032	.028	.118	.133	.037	.113	-.046	.011	.071	.079	-.066	-.016	-.055	.031	.040	.012	-.022	-.036	.102	.148	.008	-.187	.521	.114	.040	2
3	.036	.085	.075	.131	.031	.126	-.069	.032	.094	.150	-.029	.058	-.053	-.003	.059	.052	-.053	.015	.080	.157	.021	-.125	.378	.140	.055	3
4	.079	.069	.076	.144	.069	.129	-.034	.027	.103	.103	-.017	-.004	-.064	.046	.080	.021	-.002	-.024	.102	.150	-.000	-.127	.421	.121	.058	4
5	.067	.046	.116	.157	.058	.138	-.028	.036	.117	.175	-.054	.065	-.072	.025	.087	.072	-.069	.022	.098	.136	.043	-.119	.465	.170	.068	5
6	.014	.005	.101	.130	.042	.104	.032	.013	.092	.123	-.060	.036	-.092	.024	.079	.041	-.077	.014	.104	.149	-.009	-.087	.495	.129	.046	6
7	-.024	.197	.030	.020	-.006	.003	.024	-.081	-.067	-.010	-.021	-.073	-.012	.008	.018	-.026	-.032	.012	.081	.016	.003	-.026	-.026	.021	.015	7
8	-.105	.189	-.138	-.180	-.028	-.121	-.030	-.031	-.224	-.334	.300	-.028	-.027	-.088	-.164	-.275	.038	-.103	-.330	-.198	-.095	.015	-.177	-.245	-.077	8
9	.129	-.117	.137	.110	.042	-.051	.017	-.045	.220	.333	-.215	.114	.051	.032	.143	.185	.041	.084	.315	.136	.149	.070	-.092	.185	.062	9
10	.034	-.023	.097	.028	.006	-.034	-.002	-.046	.074	.078	-.103	-.009	.052	-.010	.027	.036	-.001	.024	.024	.012	.041	.046	-.169	-.009	.041	10
11	.065	-.060	.011	.068	-.014	.006	-.029	.011	.072	.134	-.032	-.00[illegible]	.076	.060	.030	.063	.011	.085	.099	.009	.084	.072	-.153	.001	.033	11
12	.183	-.105	.057	.173	.100	.043	.037	.036	.099	.166	-.063	.027	-.009	.089	.126	.023	-.063	.017	.115	.060	.098	.047	.204	.194	.276	12
13	.037	-.121	.029	.057	.065	.065	-.029	.022	.010	.044	.019	.016	.026	-.017	-.048	-.165	-.032	.013	-.015	-.031	.070	-.036	.079	.014	-.028	13
14	.074	-.162	.116	.124	-.023	.005	.036	.061	.139	.148	-.092	.034	.005	.042	.106	.097	-.034	.095	.196	.078	.020	-.062	.165	.078	.027	14
15	.035	-.011	.047	.088	.045	.076	.048	-.034	.107	.209	-.143	.009	-.071	.014	.107	.071	-.088	.033	.139	.149	.005	-.007	.258	.102	.058	15
16	.141	-.158	.090	.275	.071	.029	.023	-.035	.314	.451	-.246	.171	.043	.158	.232	.229	-.074	.142	.318	.169	.138	.042	.205	.232	.119	16
17	-.060	-.142	.023	.057	.112	.074	-.076	.091	.010	-.054	-.061	.048	.002	.121	.126	-.010	-.013	.027	-.000	.025	-.063	-.086	.566	.040	.023	17
18	-.031	.060	-.082	.105	.001	.002	-.022	-.038	.022	.124	.004	.092	.115	.043	.051	.029	-.006	.012	.020	.025	.115	.066	-.034	.036	.051	18
19	.170	-.123	.121	.306	.171	.055	.044	.000	.395	.493	-.315	.128	-.038	.238	.299	.292	-.095	.258	.339	.235	.191	-.014	.271	.282	.279	19
20	.005	.021	-.011	.041	-.016	.019	-.013	-.021	.067	.124	.011	.070	-.069	.055	.067	.055	.012	.367	.058	.093	.114	.035	.060	.058	.065	20
21	-.015	-.057	-.025	.071	.041	.023	-.060	.054	.071	.120	-.077	.082	-.026	.046	.072	.082	.022	.303	.091	.081	.123	-.004	.073	.109	.038	21
22	.052	-.062	.039	.123	.029	.036	-.069	-.045	.099	.099	-.079	.119	-.003	.077	.101	.061	.000	.087	.140	.079	.060	-.022	.177	.037	.143	22
23	-.029	.024	.064	-.022	.046	.056	-.047	.041	-.022	-.101	-.026	.010	-.049	.026	.031	.042	-.043	-.017	-.094	.050	-.004	-.069	.304	-.039	-.043	23
24	.129	-.117	.137	.110	.042	-.051	.017	-.045	.220	.333	-.215	.114	.051	.032	.143	.185	.041	.034	.315	.136	.149	.070	-.092	.185	.062	24
25	.073	-.126	.093	.055	.020	-.016	-.047	-.022	.114	.176	-.132	.118	.082	.000	.060	.146	-.020	.045	.151	.116	.079	.033	-.094	.077	.020	25
26		-.004	.108	.094	.085	.042	-.092	-.008	.090	.154	-.087	.094	.086	.114	.080	.044	.040	.003	.141	.074	.101	.063	-.077	.120	.030	26
27	1888		.030	.002	-.068	-.046	.027	.005	-.092	-.129	.176	-.080	.022	-.124	-.112	-.039	.059	-.002	-.130	-.066	.002	-.041	-.150	-.029	-.030	27
28	1881	1886		.108	.034	.081	-.015	.043	.063	.059	-.115	.057	.003	.015	.058	.036	.018	.002	.159	.097	.041	-.016	.121	.044	.014	28
29	1868	1874	1867		.029	.019	-.038	-.055	.128	.171	-.175	.111	.040	.222	.369	.090	-.022	.091	.297	.176	.217	.010	.107	.126	.077	29
30	1890	1896	1888	1876		.018	-.066	.159	.162	.089	-.069	.026	-.015	.040	.080	.047	-.048	-.016	.077	.052	.044	.011	.059	.010	-.001	30
31	1890	1896	1888	1876	1898		-.078	.021	.019	.112	-.019	.001	-.011	-.039	.023	-.054	-.026	.045	.023	.051	.022	-.009	.031	.060	-.015	31
32	1890	1896	1888	1876	1898	1898		.029	-.047	-.023	-.031	-.099	-.131	-.112	-.065	.082	-.091	.022	-.003	-.014	-.018	-.098	.029	.035	.024	32
33	1890	1896	1888	1876	1898	1898	1898		.020	-.030	.032	-.001	.010	.001	-.010	.063	.004	.068	.027	.051	.098	.049	.012	.060	.001	33
34	1890	1896	1888	1876	1898	1898	1898	1898		.475	-.141	.068	-.019	.131	.106	.149	-.012	.082	.171	.100	.113	.042	.174	.240	.037	34
35	1890	1896	1888	1876	1898	1898	1898	1898	1898		-.207	.098	-.002	.145	.214	.135	-.069	.111	.243	.147	.176	.034	.109	.326	.100	35
36	1890	1896	1888	1876	1898	1898	1898	1898	1898	1898		-.143	.050	-.096	-.133	-.132	.067	-.080	-.191	-.051	-.106	.102	-.173	-.142	-.081	36
37	1890	1896	1888	1876	1898	1898	1898	1898	1898	1898	1898		.104	.094	.096	.092	-.016	.040	.094	.114	.135	.021	-.004	.102	.003	37
38	1466	1469	1462	1454	1472	1472	1472	1472	1472	1472	1472	1472		.083	.039	-.058	-.050	-.007	.068	.046	.038	.084	-.096	-.039	-.011	38
39	1890	1896	1888	1876	1898	1898	1898	1898	1898	1898	1898	1898	1472		.432	.098	-.046	.101	.186	.104	.054	.057	.067	.097	.110	39
40	1890	1896	1888	1876	1898	1898	1898	1898	1898	1898	1898	1898	1472	1898		-.120	.049	-.074	-.235	-.152	-.171	.026	-.132	-.060	-.108	40
41	1890	1896	1888	1876	1898	1898	1898	1898	1898	1898	1898	1898	1472	1898	1898		-.082	.051	.191	.144	-.001	.061	.108	.081	.087	41
42	1829	1835	1830	1815	1837	1837	1837	1837	1837	1837	1837	1837	1429	1837	1837	1837		.012	-.011	-.061	-.002	-.007	-.041	-.003	-.024	42
43	1890	1896	1888	1876	1898	1898	1898	1898	1898	1898	1898	1898	1472	1898	1898	1898	1837		.092	.068	.161	.035	.089	.116	.032	43
44	1890	1896	1888	1876	1898	1898	1898	1898	1898	1898	1898	1898	1472	1898	1898	1898	1837	1898		.284	.116	-.048	.220	.199	.042	44
45	1890	1896	1888	1876	1898	1898	1898	1898	1898	1898	1898	1898	1472	1898	1898	1898	1837	1898	1898		.081	.040	.179	.088	.087	45
46	1890	1896	1888	1876	1898	1898	1898	1898	1898	1898	1898	1898	1472	1898	1898	1898	1837	1898	1898	1898		-.010	-.022	.235	.071	46
47	1890	1896	1888	1876	1898	1898	1898	1898	1898	1898	1898	1898	1472	1898	1898	1898	1837	1898	1898	1898	1898		-.138	.005	-.000	47
48	1882	1887	1880	1868	1890	1890	1890	1890	1890	1890	1890	1890	1463	1890	1890	1890	1829	1890	1890	1890	1890	1890		.115	.078	48
49	1890	1896	1888	1876	1898	1898	1898	1898	1898	1898	1898	1898	1472	1898	1898	1898	1837	1898	1898	1898	1898	1898	1890		.092	49
50	1888	1893	1886	1874	1895	1895	1895	1895	1895	1895	1895	1895	1469	1895	1895	1895	1835	1895	1895	1895	1895	1895	1887	1895		50

Note.- In computing this matrix school data were weighted (weights B) to reproduce the national population of public senior high schools. The computer program for incomplete data was used. The lower left portion of the matrix shows the N divided by 10 for each correlation.

Table 6-7

The Correlates of Rural-Urban Status Variable 16 (GSC-88)

Matrix I

19.	Senior Class Size	.576
31.	Books	.429
8.	Grade Structure	-.433
9.	Class Size - Science-Math	.399
41.	Repeat Summer Work	.332
34.	Homogeneous Grouping	.318
29.	Accelerated Curriculum	.275
26.	Class Size, Other	.262
50.	Guidance Program	.249
42.	Summer-New Work	.232
15.	Housing	.228
12.	% College Boys	.208
37.	Salaries, male	.205
38.	Teaching Experience	.202
35.	Tracks	.196
49.	Principal's Teaching Experience	.184
5.	Reading Comprehension	.169
1.	Information - Boys	.165
23.	Number Days in Year	.162
39.	Delinquency Rate	.161
46.	Age of Housing	-.156
18.	Years as Principal	.155
6.	Creativity	.138
3.	English Total	.128
4.	Math	.109
2.	Information - Girls	.083

Matrix II

27.	Number Teachers, New	.680
33.	Number of M.A.'s	.635
32.	Number of B.A.'s	.612
37.	% Graduate Training	.611
38.	Number Summer Schools	.447
39.	Number Summer Institutes	.343
31.	Teacher Turnover	.266
45.	Principal's Age	.240
25.	Exp. Curriculum, Local	.231
26.	Tenure	.228
48.	Principal's Degree	.213
24.	Exp. Curriculum, Inter.	.159
23.	Study Halls	-.158
36.	% in Major	.127
44.	Years Principal Here	.125

Matrix III

35.	Summer School Offerings	.451
34.	Summer School Policy	.314
36.	Adult Education	-.246
37.	Religious Education	.171
26.	Homework	.141

outside of the urban areas since it is not possible in most cases to stay at home and attend college. Thus the cost of college is increased by the price of board and room.

Despite its relatively high correlation with many other school factors, the rural-urban status variable has a relatively low correlation with the six tests. Its highest correlation is .17 which means there is a slight tendency, but only a very slight one, for the urban schools to be higher in Reading Comprehension than the rural and small town ones. This seems to be a very significant finding. It is probably largely affected by the massive migrations of uneducated rural groups to the urban centers in the last few years.

There is a substantial correlation between the rural-urban factor and grade structure. This means that there is a substantial tendency for the rural and small town schools to be grades 1 through 12 or kindergarten through 12. There is also a substantial tendency for the rural and small town schools to have smaller class size. This is because so many of them are small schools.

Since the rural-urban factor correlates quite highly with the size of the school, it also correlates highly with many other things related to the size of the school such as the number of books in the library and number of teachers.

The rural-urban factor is also substantially related to the summer school policy and offerings of the school. The rural and small town schools are less likely to have a summer school and, of course, have a smaller number of courses available in summer school.

The boys in the rural and small town schools are not much less prone to go to college, however, since the correlation with college rate for boys is only .21. The rural and small town schools have slightly less reported delinquency than the urban schools.

Both the principal and the teachers have a little less experience in the rural and small town schools. They also have somewhat fewer advanced degrees. This is probably due largely to the tendency for teachers to start in the smaller schools and work their way up to the larger schools as they become more experienced and more highly trained.

The rural and small town schools are less likely to have automatic tenure. A slightly smaller proportion of their teachers are teaching in their major field. However, there is a relatively large difference in the extent to which they have had graduate training in the subject they teach.

There is a low positive correlation with quality of housing and this indicates that the housing is likely to be slightly poorer in the rural and small town areas.

The rural and small town schools are less likely to have homogeneous grouping or multiple tracks. This may largely be because of their size which does not make it possible to have more than one class at a given grade level.

The rural and small town schools are a little less likely to have guidance programs. The correlation here is .25.

A final interesting finding is a slight tendency for the rural and small town schools to be more likely to have religious education.

Grade Structure

In this item the schools were separated according to whether they were Grades 1 to 12 or Kindergarten to 12. These schools were given plus weights and the others were given zero weights. Correlations with the item are reported in Table 6-8. The grade structure factor is relatively highly related with the rural-urban factor and the size factor. It has much the same pattern of correlations as does the rural-urban factor. The schools with the 1 to 12 or kindergarten to 12th grade structure are likely to be small, have small class size, and not have homogeneous grouping or multiple tracks. In these schools, there is less juvenile delinquency, a smaller incidence of bilingual families, more study halls, and more accelerated curricula. They are much less likely to have active summer schools.

The grade 1 to 12 and kindergarten to 12th grade schools have a little lower college attendance rate; have a little smaller percentage taking remedial reading; have buildings that are slightly older; have slightly lower salaries; and are less likely to have automatic tenure. The teachers have less experience and training, and the principals have fewer higher degrees.

This factor is only slightly related to test performance. Its highest correlation is .17 with Reading Comprehension.

School Size

This factor is the size of the senior class. Correlations with it are reported in Table 6-9. The size of the senior class has a sizable positive relationship with average class size, number of books in the library, and number of teachers. The correlation between the number of teachers with Master's degrees and school size is particularly high, being .771. The larger schools tend to have much more active summer schools. The size of the senior class has slightly more correlation with the rate of college attendance for boys than does the rural-urban factor, but the difference is only .21 vs. .25. The larger schools are less likely to be grades 1 to 12 or kindergarten to 12. They have larger class size; slightly higher housing quality; are very likely to be urban; have a longer school year; and are more likely to have homogeneous groupings or multiple tracks. They are likely to have a little higher salary and teachers with a little more experience. They are also more likely to have guidance programs and more likely to have students on double schedules. They are more likely to have automatic tenure but less likely to have an accelerated curriculum.

It can be seen from the above that school size or size of the senior class is very heavily related to a large number of other school factors and should not be used for direct comparisons.

Table 6-8

The Correlates of Grade Structure Variable 8 (GSC-21)

Matrix I

16.	Rural-urban	-.433
19.	Senior Class Size	-.407
31.	No. books in library	-.387
34.	Homogeneous Grouping	-.330
9.	Class Size, Sci. & Math	-.323
50.	Guidance Program	-.317
42.	Summer, new work	-.245
35.	Tracks	-.220
26.	Class size, other	-.213
39.	Juvenile Delinquency	-.212
47.	Bi-Lingual Families	-.210
15.	Housing quality	-.200
41.	Repeat or Summer work	-.192
29.	Accelerated Curriculum	-.180
37.	Salary - male	-.177
5.	Reading Comprehension	-.172
14.	Per Cent Remedial Reading	-.171
38.	Teachers' Experience	-.162
6.	Creativity Test	-.148
1.	Information Test - boys	-.147
12.	College - boys	-.147
32.	Age of building	.140
3.	English Total	-.133
4.	Mathematics Total	-.124
2.	Information Test - girls	-.116

Matrix II

27.	Number full-time teachers this year	-.582
33.	Number Master's degree only	-.492
37.	Graduate training in subjects taught	-.488
32.	No. Bachelor's degree only	-.480
38.	No. attending summer school	-.329
39.	No. attending summer institute	.296
26.	Tenure	-.274
31.	Teacher turnover	-.234
23.	Study Halls	.190
48.	Principal's highest earned degree	-.171
25.	Experimental Curriculum, local	-.163
42.	Average teaching experience	-.163

Matrix III

35.	Summer school offerings	-.334
36.	Adult Education	.300
34.	Summer school policy	-.224
27.	Study Halls	.189
29.	Accelerated curriculum	-.180

Table 6-9

The Correlates of School Size, Variable 19 (GSC-59)

	Matrix I	
16.	Rural-urban	.576
41.	Summer-repeat remedial work	.437
9.	Class size-Sci. & Math.	.416
8.	Grade structure	-.407
31.	No. books in library	.404
34.	Homogeneous grouping	.339
29.	Accelerated curriculum	.308
42.	Summer - new work	.282
43.	Double schedule	.279
23.	No. days in school year	.274
37.	Salary	.271
22.	Mid-year promotion	-.269
35.	Tracks	.266
50.	Guidance program	.264
12.	College - boys	.247
38.	Teaching experience	.246
15.	Housing quality	.232
26.	Class size - other	.223
49.	Principal's teaching exp.	.206
5.	Reading Comprehension	.197
1.	Information Test - boys	.187

	Matrix I (contd.)	
6.	Creativity Test	.164
4.	Mathematics Test	.141
3.	English Total	.132

	Matrix II	
33.	No. Master's degree only	.771
27.	No. Teachers this year	.678
25.	Experimental curriculum, local	.298
26.	Tenure	.291
24.	Experimental curriculum, inter-system	-.239

	Matrix III	
35.	Summer school offerings	.493
34.	Summer school policy	.395
36.	Adult education	-.315

Housing Quality

Here, we see a school characteristic with a sizable correlation with the six tests. Its correlations are reported in Table 6-10. Its highest correlation is .38 with Information Test mean for boys - 10th grade. It is most interesting here, to see that housing quality correlates more highly with test score than it does with any other school factor in the matrix. Better housing quality correlates significantly with grade structure and multiple tracks. It has a rather low correlation with rural-urban status. Superior housing quality correlates positively with college attendance; size of the senior class; salary structure; guidance program; number of teachers; and summer school. The above make a very interesting pattern of interrelationships. It seems to indicate that housing quality of a good or poor nature may accompany most any combination of other school characteristics but whenever poor housing occurs, the test scores tend to be correspondingly low.

Absentee Rate

The correlations with absentee rate are reported in Table 6-11. Absentee rate has a substantial negative correlation with the various tests. The highest one is .37 for information mean for girls - 10th grade. Absentee rate correlates positively with class size and dropout rate. It correlates negatively with college attendance rate, per-pupil expenditure, age of the buildings, and salary schedule.

Table 6-10

The Correlates of Housing Quality, Variable 15 (GSC-87)

Matrix I

1.	Information Test - boys	.384
5.	Reading Comprehension	.382
4.	Mathematics Test	.379
6.	Creativity Test	.368
3.	English Total	.361
37.	Salary	.258
12.	College - boys	.245
19.	Senior Class size	.232
31.	No. books in library	.231
15.	Rural-urban	.228
8.	Grade structure	-.200
35.	Tracks	.169
50.	Guidance Program	.150
17.	Per-pupil expenditure	.126

Matrix II

28.	No. Full-time teachers last year	.320
27.	No. full-time teachers this year	.307
37.	Graduate training in subjects taught	.279
33.	No. Master's degree only	.267
40.	Salary starting - men	.257
32.	No. Bachelor's degree only	.250
41.	Starting salary-women	.245
39.	No. attending summer institutes	.186
38.	No.attending summer sch.	.174

Matrix III

35.	Summer school offerings	.209
36.	Adult education	-.143

Table 6-11

The Correlates of Absentee Rate, Variable 10 (GSC-29)

Matrix I

2.	Information Test - girls	-.371	11.	Dropout - boys	.232
1.	Information Test - boys	-.368	26.	Class size - other	.218
3.	English Total	-.360	32.	Age of building	-.170
4.	Mathematics Test-total	-.343	37.	Salary	-.169
6.	Creativity Test	-.339	17.	Per-pupil expenditure	-.162
5.	Reading Comprehension	-.335	12.	College - boys	-.148
9.	Class size-Sci. & Math.	.290	19.	Senior class size	.114
			15.	Housing quality	-.096

Dropout Rate for Boys

Table 6-12 reports the correlations with boys' dropout rate. It is most interesting here to see that dropout rate has a much lower correlation with the tests than does absentee rate. Its highest correlation is .21 for

Information mean for girls - 10th grade. Dropout rate correlates positively with class size. It has a surprisingly low correlation with absentee rate. The correlation is .23. Dropout rate has a low correlation with senior class size and juvenile delinquency rate. It has a slight negative correlation with per-pupil expenditure and salary.

Table 6-12

The Correlates of Dropout Rate - Boys, Variable 11 (GSC-70)

	Matrix I			Matrix I (contd.)	
10.	Absentee rate	.232	37.	Salary	-.153
2.	Information Test-girls	-.210	19.	Senior class size	.144
9.	Class size-Sci. & Math.	.202	3.	English Total	-.138
6.	Creativity Test	-.192		Matrix II	
4.	Mathematics Test	-.177	38.	No. attending summer school	.156
5.	Reading Comprehension	-.177			
17.	Per-pupil expenditure	-.171			
39.	Juvenile delinquency	.159			
1.	Information Test-boys	-.155			

College Attendance Rate for Boys

This has a fairly substantial correlation (Table 6-13) with test performance. The highest correlation is .34 with Reading Comprehension. The college attendance rate has a negative correlation with grade structure and absenteeism. It has a positive correlation with housing quality, rural-urban status, junior college attendance rate, per-pupil expenditure, senior class size, homework assigned, and starting salary for male teachers.

The rate of college attendance correlates .28 with the percentage of the students that are on double schedule. As will be seen later, when correlations are computed for homogeneous groups of schools, or where comparisons are made with disturbing socio-economic and rural-urban factors properly controlled, the double schedule factor is found to have no relationship to college attendance.

Per-Pupil Expenditure

Per-pupil expenditure (entire system) is well correlated with the six tests. Its highest correlation in Table 6-14 is .42 for Information mean for girls - 10th grade. There seems to be more variation in the correlations of the various tests with this factor as compared with other factors. One possible explanation is that regions with low per-pupil expenditure may overachieve somewhat in English, math, and reading areas. As will be presented later, there is evidence that this may be true.

Per-pupil expenditure is negatively related to class size. It is also negatively related to type of school; absentee rate; dropout rate; and

Table 6-13

The Correlates of College Rate - Boys Variable 12 (GSC-72)

	Matrix I	
5.	Reading Comprehension	.341
1.	Information Test - boys	.330
2.	Information Test - girls	.319
4.	Mathematics Test-total	.311
6.	Creativity Test	.305
3.	English Total	.291
43.	Double schedule	.276
19.	Senior class size	.247
15.	Housing quality	.245
16.	Rural-urban	.208
37.	Salary	.204
31.	No.of books in library	.202
17.	Per-pupil expenditure	.198
42.	Summer - new work	.194
27.	Homework expected	.183
13.	Per cent junior college	.179
29.	Accelerated curriculum	.173
	Matrix I (contd.)	
41.	Repeat or remedial summer work	.169
10.	Absentee rate	-.148
8.	Grade structure	-.147
11.	Dropout - boys	-.104
	Matrix II	
33.	No.Master's degree only	.279
37.	Graduate training in subjects taught	.247
27.	No.full-time teachers this year	.216
38.	No.attending summer sch.	.179
32.	No.Bachelor's degree only	.168
	Matrix III	
35.	Summer school offerings	.166

Table 6-14

The Correlates of Per-Pupil Expenditure Variable 17 (GSC-89)

	Matrix I	
37.	Starting Salary, Male	.566
2.	Information-girls	.419
6.	Creativity Test	.374
1.	Information Test-boys	.358
9.	Class size-Sci. & Math.	-.333
4.	Mathematics Test-total	.318
5.	Reading Comprehension	.314
24.	No.class periods per day	.311
3.	English Total	.236
12.	College - boys	.198
20.	Accreditation	-.183
38.	Experience of teachers	-.179
11.	Dropout - boys	-.172
47.	Bilingual families	.164
10.	Absentee rate	-.162
50.	Guidance Program	.156
23.	No.days in school year	.151
	Matrix I (contd.)	
26.	Class size - other	-.146
39.	Juvenile delinquency	.136
15.	Housing quality	.126
7.	Type of school	-.122
16.	Rural-urban	-.012
	Matrix II	
41.	Starting salary-women	.583
30.	Per cent male teachers	.224
28.	No.full-time teachers last year	.028
27.	No.full-time teachers this year	.019
	Matrix III	
27.	Study Halls	-.142

experience of teachers. Per-pupil expenditure is positively related to college attendance; number of days in the school year; number of class periods; delinquency rate; percentage of bilingual families; guidance programs and per cent of the teachers who are men, but it is surprising that the correlation is not even higher. Apparently, schools must vary considerably in the proportion of the school dollar that they devote to salaries as compared with other purposes.

Table 6-15 reports the correlations with starting salary for men. It correlates .96 with the salary schedule for women, so these two items are highly related. The high level of correlation between this item and the tests came rather as a surprise to the investigators. It had not been expected that it would be one of the most highly correlated items and it was not included among the 19 core items that were included in all four of the matrices. As does per-pupil expenditure, salary schedule shows higher correlation with Information than it does with English and math. The same

Table 6-15

The Correlates of Salary Schedule-Men Variable 37 (GSC-56)

	Matrix I	
47.	Bilingual families	.260
39.	Juvenile delinquency	.257
35.	Tracks	.229
50.	Guidance program	.205
31.	No.books in library	.193
32.	Age of building	.164
	Matrix II	
41.	Starting salary-women	.957
17.	Per-pupil expenditure	.566
2.	Information Test-girls	.521
6.	Creativity Test	.495
1.	Information Test-boys	.487
5.	Reading comprehension	.465
4.	Mathematics Test-total	.421
3.	English Total	.378
37.	Graduate training in subjects taught	.332
30.	Per cent male teachers	.320
33.	No.Master's degree only	.315
27.	No.full-time teachers this year	.286
28.	No.full-time teachers last year	.277
	Matrix II (contd.)	
19.	Senior class size	.270
15.	Housing quality	.257
38.	No.attending summer sch.	.254
32.	No.Bachelor's degree only	.220
12.	College - boys	.204
16.	Rural-urban	.204
20.	Accreditation	-.187
8.	Grade structure	-.176
10.	Absentee rate	-.168
14.	Per cent remedial reading	.165
11.	Dropout - boys	-.153
26.	Tenure	.151
23.	Study Halls	-.150
	Matrix III (Variable 48)	
23.	No.class periods per day	.304
44.	Homogeneous grouping	.220
22.	No.days in school year	.177
34.	Summer school policy	.174
36.	Adult education	-.173

explanation may hold true. It is interesting that the salary schedule item correlates better with test performance than it does with any other school characteristic - other than the obvious one of per-pupil expenditure. Its correlation with some of the tests is almost as high as is its correlation with per-pupil expenditure. It is very interesting, too, to note that salary schedule has noticeably more correlation with the tests than does per-pupil expenditure. One possible explanation is (as will be shown later) that salary schedule is probably more highly correlated with region than are any of the other school factors -- with those regions tending to have the lowest test performance tending to be substantially lower in teacher salary than in the rest of the country.

The salary schedule item has a positive relationship to college attendance; housing quality; school size; automatic tenure; the number, experience, and training of teachers; summer school programs; the number of days in the school year; the number of class periods; homogeneous grouping; multiple tracks; juvenile delinquency; guidance programs; per cent of bilingual families, and the age of the buildings.

Class Size

Class size in science and mathematics has positive, but fairly low, correlations with various tests as shown in Table 6-16. The highest correlation is .22 for Information mean for girls - 10th grade. It is very interesting to note that the factor of class size in science and mathematics correlates .42 with the size of the senior class and .40 with the rural-urban factor. Thus, many of the rural schools are small and have small class size. This probably tends to cancel out much of the possible correlation with test scores. Class size in subjects other than science and mathematics correlates .22 with number of seniors and .26 with rural-urban status. The correlation between class size in science and math and salary for men is .27. However, as will be reported later it does not have a large relationship with test performance even when other things such as school size, expenditures, and the like are held constant. It correlates negatively with grade structure. The correlation is .32. Class size in science and mathematics correlates positively with absenteeism; dropout; number of books in the library; homogeneous grouping; multiple track; acceleration policy; experience of the teachers; and guidance programs. It also correlates positively with automatic tenure; proportion of teachers teaching in their major; and experience of the teachers and principals. The schools with the larger class sizes also are more likely to have summer schools and a variety of offerings. Class size in science and mathematics is not correlated with quality of housing. It has a negative correlation with the number of periods in the day, and the age of the school building.

Class size in other than mathematics and science only correlates .52 with class size in science and mathematics. It also has lower correlations with the tests even including English.

Class size has little meaning unless one is comparing schools large enough to have multiple classes in subjects.

Table 6-16

The Correlates of Class Size - Sci. & Math. Variable 9 (GSC-9)

Matrix I

26.	Class size - other	.522
31.	No.books in library	.424
19.	Senior class size	.416
16.	Rural-urban	.399
17.	Per-pupil expenditure	-.333
8.	Grade structure	-.323
34.	Homogeneous grouping	.315
10.	Absentee rate	.290
32.	Age of school	-.236
2.	Information Test-girls	-.224
38.	Experience of teachers	.213
41.	Repeat or remedial summer work	.209
11.	Dropout - boys	.202
42.	Summer - new work	.185
6.	Creativity Test	-.184
24.	No.class periods per day	-.178
35.	Tracks	.153
36.	Accelerated policy	.149
4.	Mathematics Test-total	-.146
46.	Age of housing	-.145
5.	Reading Comprehension	-.143
1.	Information Test-boys	-.140
50.	Guidance Program	.138
3.	English Total	-.116
15.	Housing quality	.042

Matrix II

27.	No.full-time teachers this year	.516
28.	No.full-time teachers last year	.512
32.	No.Bachelor's degree only	.467
37.	Graduate training in subjects taught	.408
33.	No.Master's degree only	.381
39.	No.attending summer inst.	.321
38.	No.attending summer sch.	.269
31.	Teacher turnover	.219
42.	Average teaching exper.	.215
48.	Principal's highest earned degree	.208
26.	Tenure	.183
36.	Per cent teaching in major area	.181
44.	Years a principal in this school	.177
45.	Principal's age	.152

Matrix III

35.	Summer school offerings	.333
34.	Summer school policy	.220
36.	Adult education	-.215
49.		

School Characteristics Intercorrelations by Taxonomy Groups

Matrix I-A is a 50 variable matrix which consists of a combination of 12 test means and 38 questionnaire responses for the public high schools. These schools have been sorted out into 17 homogeneous taxonomy groups. The correlations have been separately computed for each group of schools, using the school as the statistical unit. Since there are some missing data on questionnaire items, the correlations were computed with a variable N. meaning that there is a different N for each combination of variables correlated. With the exception of English, where both the 10th grade and the 12th grade means were used, the test means were for the 12th grade. The non-test variables were taken from the questionnaire filled out by the principal of each school. All combinations are weighted computations, weighted by the combining weight of the school assigned to adjust for non-participation and variable sampling ratio (weights B). Tables 6-17 through 6-20 below show for each test in the matrix its correlation with average class size in mathematics and science, absentee rate, dropout rate, college attendance rate for boys, per-pupil expenditure (entire system), size of the senior class, average size of class other than math or science, age of the school plant, beginning salary for male teachers, delinquency rate, and whether they have a guidance program.

Table 6-17 shows some of the correlation for Total Information (boys) Grade 12 mean. It can be seen that the correlations vary a great deal by taxonomy group. High positive and high negative correlation coefficients are found in the same column. To indicate a general over-all tendency of the trend in relationship, the number of positive correlations and number of negative correlations are reported at the bottom of each column. It can be seen that, with one exception, the correlations with college rate (per cent of boys going to college) are all positive, and many of them are surprisingly high. There seems to be a tendency here for the correlations to be higher for the urban groups than for the rural and town groups, particularly for the urban high quality housing groups. A preponderance of positive correlations is found for expenditure rate, size of the senior class, and male salary. A preponderance of negative correlations seems to be found for average class size in mathematics and science, absentee rate, size of class other than math and science. The variance of values of the correlation within each column is not in most cases a function of sampling error of measurement. There is an over-all tendency for the correlations to run smaller for the rural and town groups than for the other groups. This is probably because the average enrollment in these schools is smaller, and thus the means and proportions are based on a much smaller group and are much less reliable. This should reduce the over-all values of correlations obtained. It is found that this is true for the intercorrelations of the test score means themselves.

Table 6-18 shows the correlations for means for Information Total, Grade 12 girls. The basic pattern of correlations seems to be much the same as for the Information Total mean for the boys.

Tables 6-19 and 6-20 show the results for the English Total Grade 10 means and the English Total, Grade 12 means. The pattern seems to be substantially the same for both the Grade 10 and the Grade 12 means. Both the Grade 10 and the Grade 12 means for English correlate very highly with the rate of attendance at college for boys. The Grade 10 mean seems to correlate higher than for any of the other tests.

Figures 6-1 through 6-6 are charts showing the relationship between the correlations of pairs of tests against a common criterion. For example, Figure 6-1 plots the correlations for Abstract Reasoning with per-pupil expenditure on the horizontal scale with the correlations for English Total with per-pupil expenditure on the vertical scale for each taxonomy group. Each point on the graph indicates, for a single taxonomy group, the pair of correlations between each of the two tests and per-pupil expenditure. There is a moderately high correlation between the set of Abstract Reasoning and English Total correlations here; the value is .70. However, the relationship is much higher for Abstract Reasoning and English Total Grade 12 in Figure 6-2

Table 6-17

Correlations of Various School Characteristics Variables with School Means for Grade 12 Boys on Total Information I (R-190)

Variable:	18	16	17	44	22	42	24	15	31	37	50
Item:	GSC-72	GSC-29	GSC-70	GSC-69	GSC-89	GSC-56	GSC-59	GSC-9	GSC-10	GSC-33	GP-1
Tax. Gp.	College attendance, Boys	Absentee rate	Dropout, boys	Juvenile delinquency rate	Per-pupil expenditure	Starting salary, Male	Senior class size	Class size, science and math	Class size, other	Age of building	Have Guidance Program
10	404	299	-068	-052	-446	-231	-190	-177	-240	-005	--
21	697	-250	719	214	753	196	725	124	709	-240	--
22	843	154	-374	-768	-055	263	281	089	-180	148	--
32	609	-715	-424	080	071	-001	-069	-242	-479	-125	110
42	710	-125	-070	286	475	372	015	-143	067	-276	--
43	656	-108	033	023	342	671	-025	-154	-178	-089	055
44	596	-395	388	-010	596	362	-130	-377	-345	-019	-212
51	529	-646	342	-115	050	168	158	-288	-233	548	-205
52	345	-250	000	057	231	209	269	053	-055	222	-059
53	355	-675	-184	-107	041	173	268	-078	032	396	121
54	170	-265	-112	132	096	270	121	-142	-097	385	050
61	272	090	-025	207	505	462	312	517	-063	163	398
62	-004	039	-127	-052	005	155	159	-171	-211	-022	312
63	153	-140	-148	113	132	230	216	045	093	062	115
64	283	-176	-041	071	043	521	180	101	160	017	150
No. Positive	14	4	5	9	13	13	11	6	5	8	8
No. Negative	1	11	10	6	2	2	4	9	10	7	3

Decimal points omitted

Table 6-18

Correlations of Various School Characteristics Variables with School Means for Grade 12 Girls on Total Information (R-190)

Variable:	18	16	17	44	22	42	24	15	31	37	50
Item:	GSC-72	GSC-29	GSC-70	GSC-69	GSC-89	GSC-56	GSC-59	GSC-9	GSC-10	GSC-33	GP-1
Tax.Gp.	College attendance, Boys	Absentee rate	Dropout, Boys	Juvenile delinquency rate	Per-pupil expenditure	Starting salary, male	Senior class size	Class size, science and math	Class size, other	Age of building	Have Guidance Program
10	647	322	395	-745	-179	-063	-188	-541	-534	533	--
21	453	-133	465	-067	836	007	644	483	556	-347	--
22	676	015	-464	-744	018	254	199	-057	-256	155	--
32	612	-744	-499	068	178	083	-174	-356	-575	-164	060
42	653	-104	-074	298	509	446	-082	-143	-001	-326	--
43	368	152	-019	009	441	573	-205	-119	-018	-030	263
44	574	-424	257	-070	742	404	-487	-463	-551	262	-268
51	379	-648	424	-241	230	366	-067	-505	-458	669	-298
52	493	-244	-023	074	244	176	284	-095	-096	248	-067
53	377	-712	-093	-093	-093	090	083	-339	- 249	537	077
54	247	-263	012	161	161	214	045	-222	-110	389	-017
61	255	137	-037	373	610	492	294	402	-107	342	424
62	-022	-041	-173	-069	008	178	086	-196	-016	043	356
63	124	-008	-066	105	016	244	094	128	033	035	187
64	361	-249	-162	-057	161	330	065	-041	-036	219	154
No. positive	14	4	5	8	13	14	9	12	13	11	7
No. Negative	1	11	10	7	2	1	6	3	2	4	4

Decimal points omitted

Table 6-19

Correlations of Various School Characteristics Variables with School Means for Grade 10 Boys on English Total (R-230)

Variable:	18	16	17	44	22	42	24	15	31	37	50
Item:	GSC-72	GSC-29	GSC-70	GSC-69	GSC-89	GSC-56	GSC-59	GSC-9	GSC-10	GSC-33	GP-1
Tax.Gp.	College attendance, Boys	Absentee rate	Dropout, Boys	Juvenile delinquency rate	Per-pupil expenditure	Starting salary, male	Senior class size	Class size, science and math	Class size, other	Age of building	Have Guidance Program
10	496	-055	-265	-411	-621	-194	025	095	086	343	--
21	604	-449	472	-012	585	234	699	307	710	-293	--
22	617	-579	-837	-810	701	424	-126	-401	-330	412	--
32	648	-763	-557	026	069	041	-200	-361	-581	-201	-029
42	580	-177	-377	239	330	275	-101	-299	-038	-058	--
43	596	-171	-153	-076	143	328	-251	-552	-526	177	-281
44	313	-325	171	085	407	214	-044	-175	-382	-006	159
51	504	-644	355	-028	131	232	249	-308	-288	503	-169
52	309	-326	-105	008	228	120	131	-067	-090	346	-160
53	244	-559	056	076	045	215	202	-183	-232	485	073
54	180	-392	079	151	-003	036	105	-137	-110	420	065
61	261	253	-191	240	357	383	136	439	-003	095	553
62	003	-037	-097	-080	-091	-064	-064	-252	-170	093	173
63	167	-223	-207	008	255	250	009	-122	-113	215	145
64	220	-106	-013	101	013	340	145	104	120	063	225
No. positive	15	1	5	9	12	13	9	4	3	11	7
No. negative	0	14	10	6	3	2	6	11	12	4	4

Decimal points omitted

Table 6-20

Correlations of Various School Characteristics Variables with School Means* for Grade 12 Boys on English Total (R-230)

Variable:	18	16	17	44	22	42	24	15	31	37	50
Item:	GSC-72	GSC-29	GSC-70	GSC-69	GSC-89	GSC-56	GSC-59	GSC-9	GSC-10	GSC-33	GP-1
Tax. Gp.	College attendance, Boys	Absentee rate	Dropout, Boys	Juvenile delinquency rate	Per-pupil expenditure	Starting salary, male	Senior class size	Class size, science and math	Class size, other	Age of building	Have Guidance Program
10	104	-077	059	-075	-360	152	-244	-340	-365	-116	--
21	222	-019	203	-284	456	-134	712	322	546	-171	--
22	737	097	-439	-813	065	363	216	-032	-314	294	--
32	674	-648	-452	158	123	024	-013	-183	-463	-046	188
42	574	-163	-171	349	250	181	-037	-148	107	-167	--
43	486	008	-195	029	529	588	201	033	125	-076	300
44	174	-282	184	026	311	-031	-063	-200	-400	107	304
51	445	-717	346	016	148	269	230	-266	-251	445	-116
52	364	-330	-063	135	259	243	214	-088	-129	316	-077
53	314	-643	-189	-061	-004	165	243	-113	-081	452	226
54	173	-154	026	153	110	129	142	-126	-006	289	108
61	428	234	-095	161	263	334	096	470	019	-097	535
62	047	086	-053	-031	-054	-038	086	-165	-163	058	351
63	308	-163	-009	113	250	188	128	-008	-050	018	165
64	277	-256	-032	043	036	448	124	050	141	128	064
No. positive	15	4	5	5	12	12	11	4	5	9	9
No. negative	0	11	10	10	3	3	4	11	10	6	2

* Decimal points omitted

against the common criterion of class size in other than math and science. The correlation here is .88.

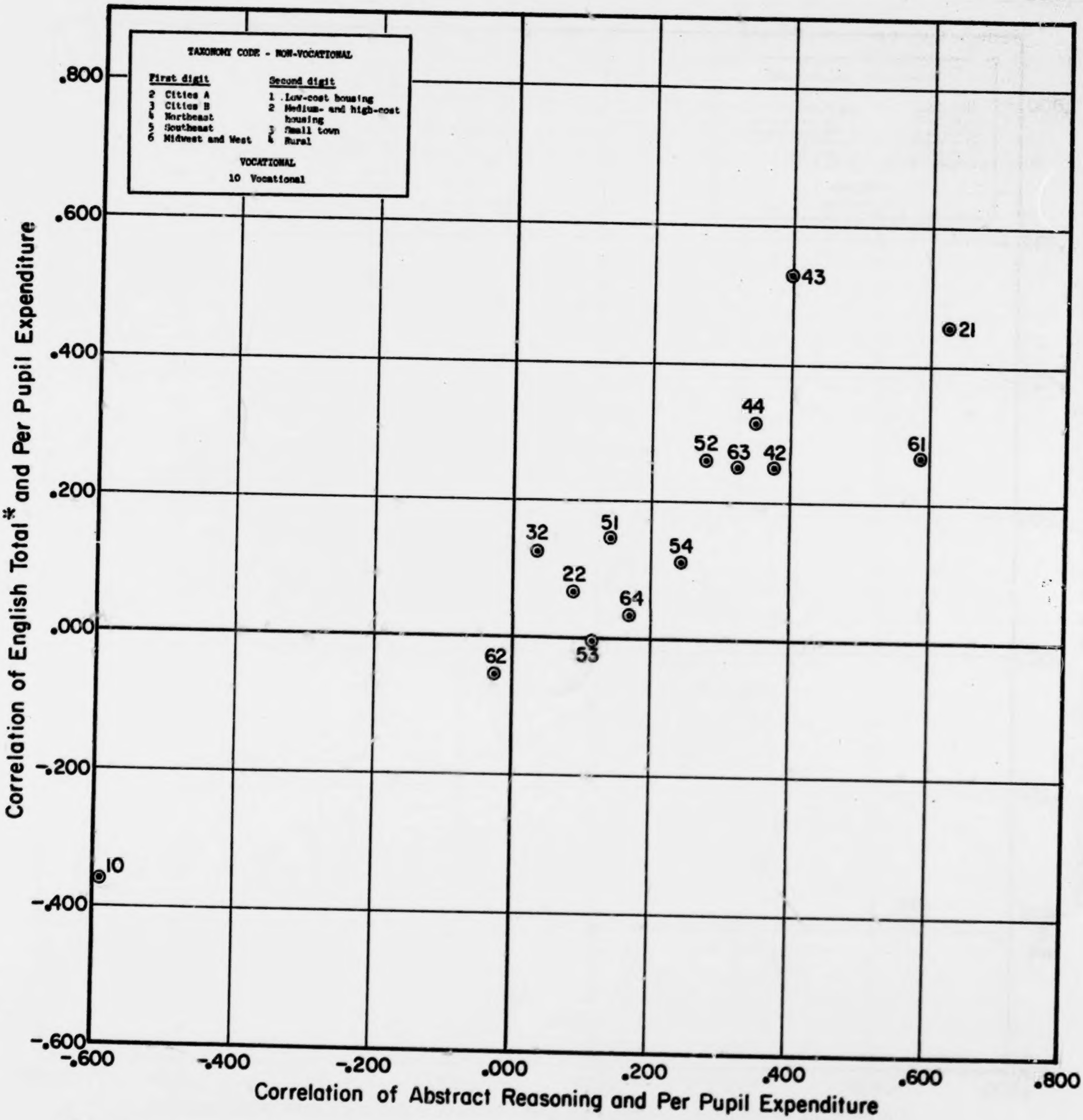
It can be seen in Figure 6-1 that there is a definite tendency towards the correlations for pupil expenditure to be positive for both Abstract Reasoning and English Total. However, it can be seen that there is a great deal of variation in the magnitude of these correlations, and for some of the groups the correlations are very close to zero. For some groups, such as Group 43, the correlation with per-pupil expenditure tends to be higher for English than for Abstract Reasoning. For other groups, such as Group 61, the opposite is true. This indicates that the regressional and factorial patterns for the pair of variables will differ noticeably when computed for samples of different types of schools. Studies are underway to determine if this will also be true for correlations and factor patterns based on samples of individuals from different types of schools. If this is found to be true, it will have important implications in psychometric research and testing.

In Figure 6-2 can be seen a tendency towards some negative correlation between Abstract Reasoning or English and average class size in science and mathematics. However, it can be seen that there is a great deal of variation here. In one group, for example, Group 21, there is a strong positive correlation indicating that the performance is better where the classes are larger. From other information elsewhere reported, it has been shown that within the very largest cities, the high-performance schools tend to be a great deal larger than the low-performance schools and this is reflected in the average class size. As a result, one finds some negative correlations with class size for the high-quality housing groups in Cities A and a very strong positive correlation in the group of Cities A schools with poor-quality housing.

In Figure 6-3 can also be seen a very considerable amount of variation in the tendency of the two tests to correlate with starting salary for male teachers. There is a substantial tendency towards a positive association here but the correlation is low in some groups, and as can be seen again, is negative for the poor-quality housing schools in the very largest cities. Group 10, the vocational high schools, can be seen off at a considerable distance from the trend line here. It shows a negative correlation between abstract reasoning and starting salary and a positive correlation between English Total and starting salary. This is probably a result of the very pronounced under-performance in English as compared to Abstract Reasoning for the vocational high schools.

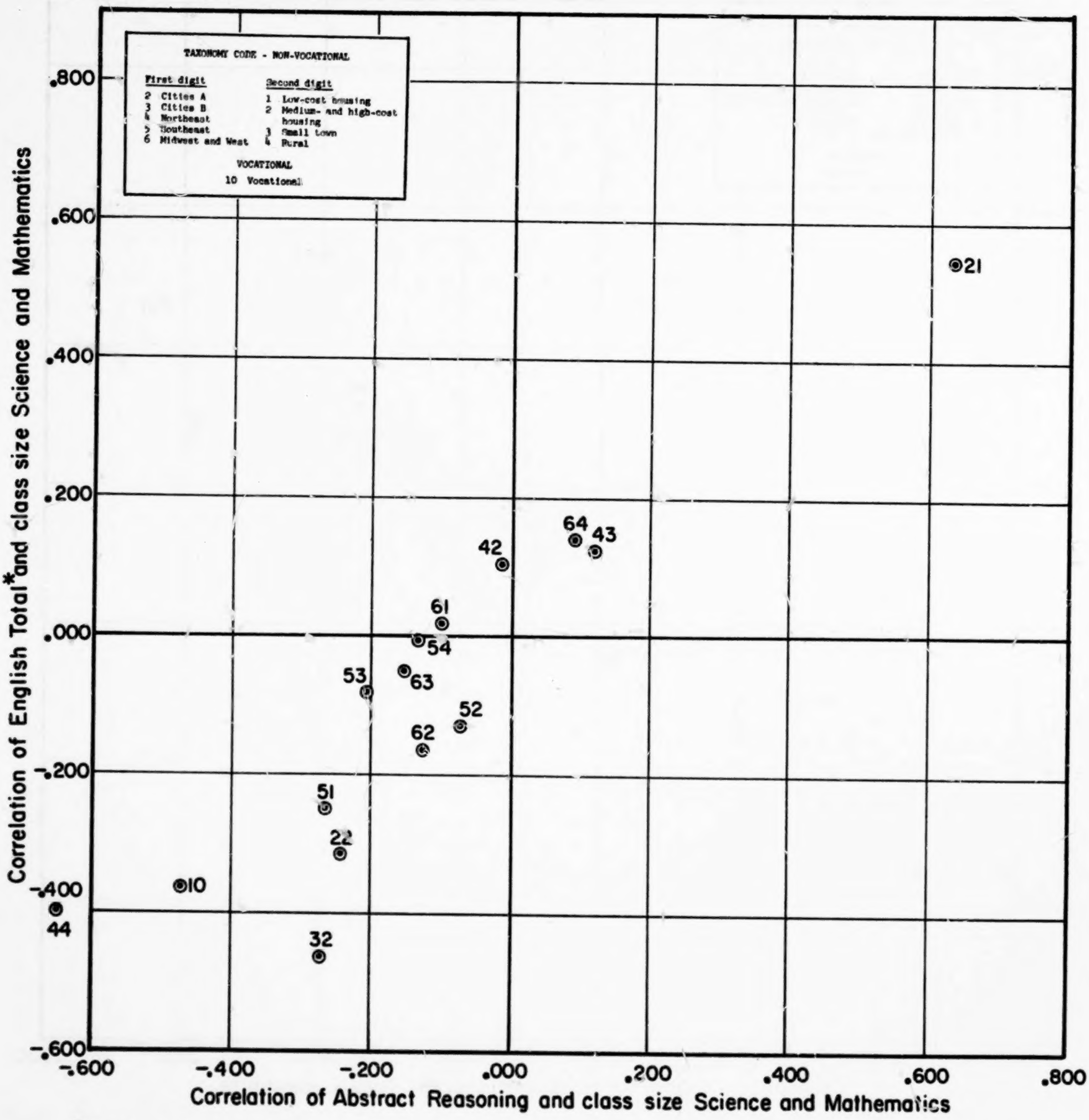
In Figure 6-4, it can be seen that a large number of the groups tend to cluster around very low correlation values for Total Information and Mechanical Information against per-pupil expenditure. It is very interesting to note here the very high correlation for Group 21, low-quality housing, very large city schools, and Group 10, vocational high schools, which has a relatively strong negative correlation between performance on these tests and per-pupil expenditure. Most of the Group 21 and Group 10 schools are in the same cities.

In Figure 6-5 it can be seen that the various pairs of correlations for the various groups line up very nearly in a straight line, indicating a very



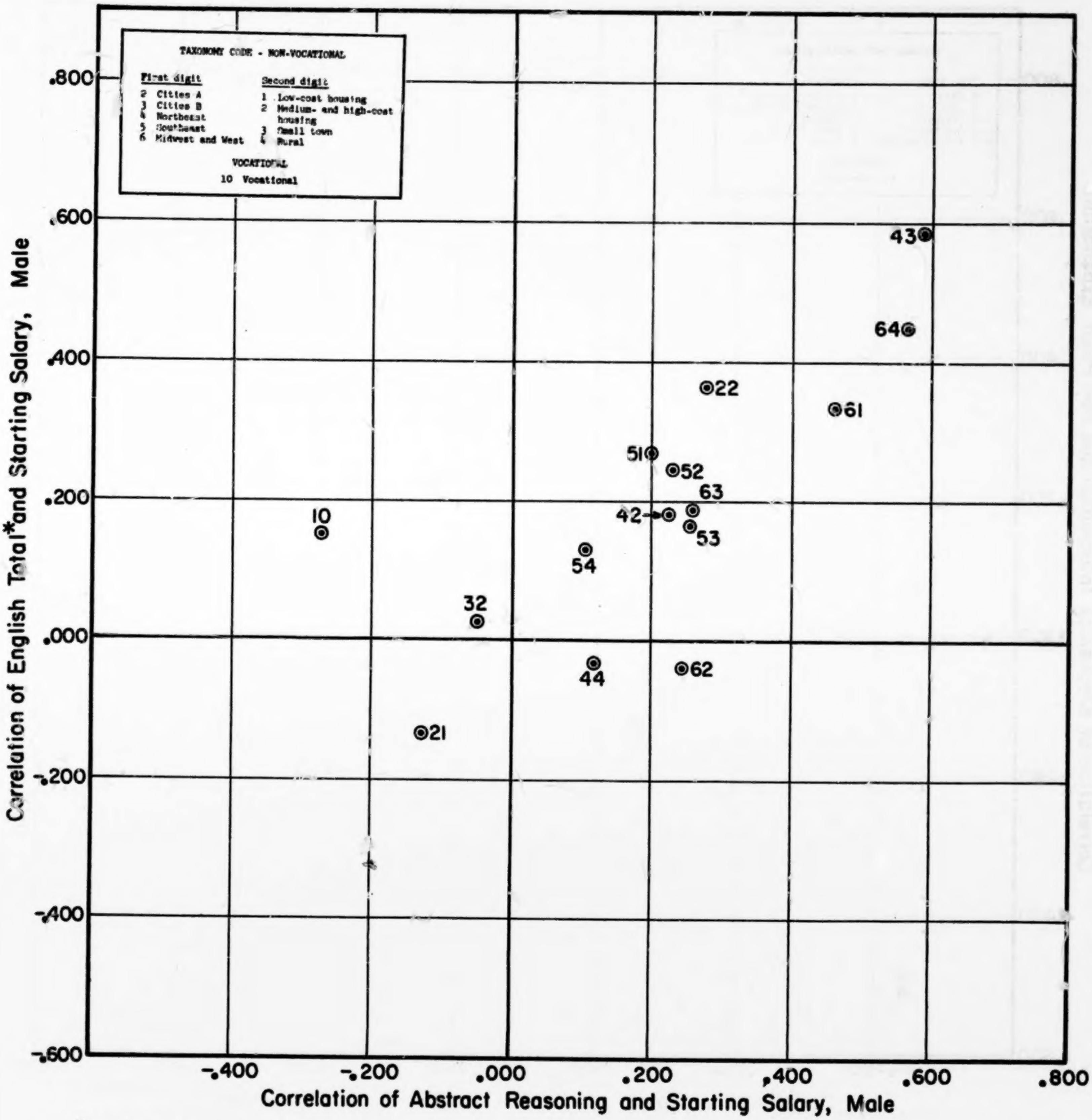
*Grade 12 boys and girls

Figure 6-1. Correlation of Abstract Reasoning (R-290) and Per-Pupil Expenditure (GSC-89) against Correlation of English Total (R-230) and Per-Pupil Expenditure (GSC-89) plotted by taxonomy groups



*Grade 12 boys and girls

Figure 6-2. Correlation of Abstract Reasoning (R-290) and Class Size in Science and Math (GSC-9) against Correlation of English Total (R-230) and Per-Pupil Expenditure (GSC-89) plotted by taxonomy groups



*Grade 12 boys and girls

Figure 6-3. Correlation of Abstract Reasoning (R-290) and Starting Salary for Male Teachers (GSC-56) against Correlation of English Total (R-230) and Starting Salary for Male Teachers (GSC-56) plotted by taxonomy groups

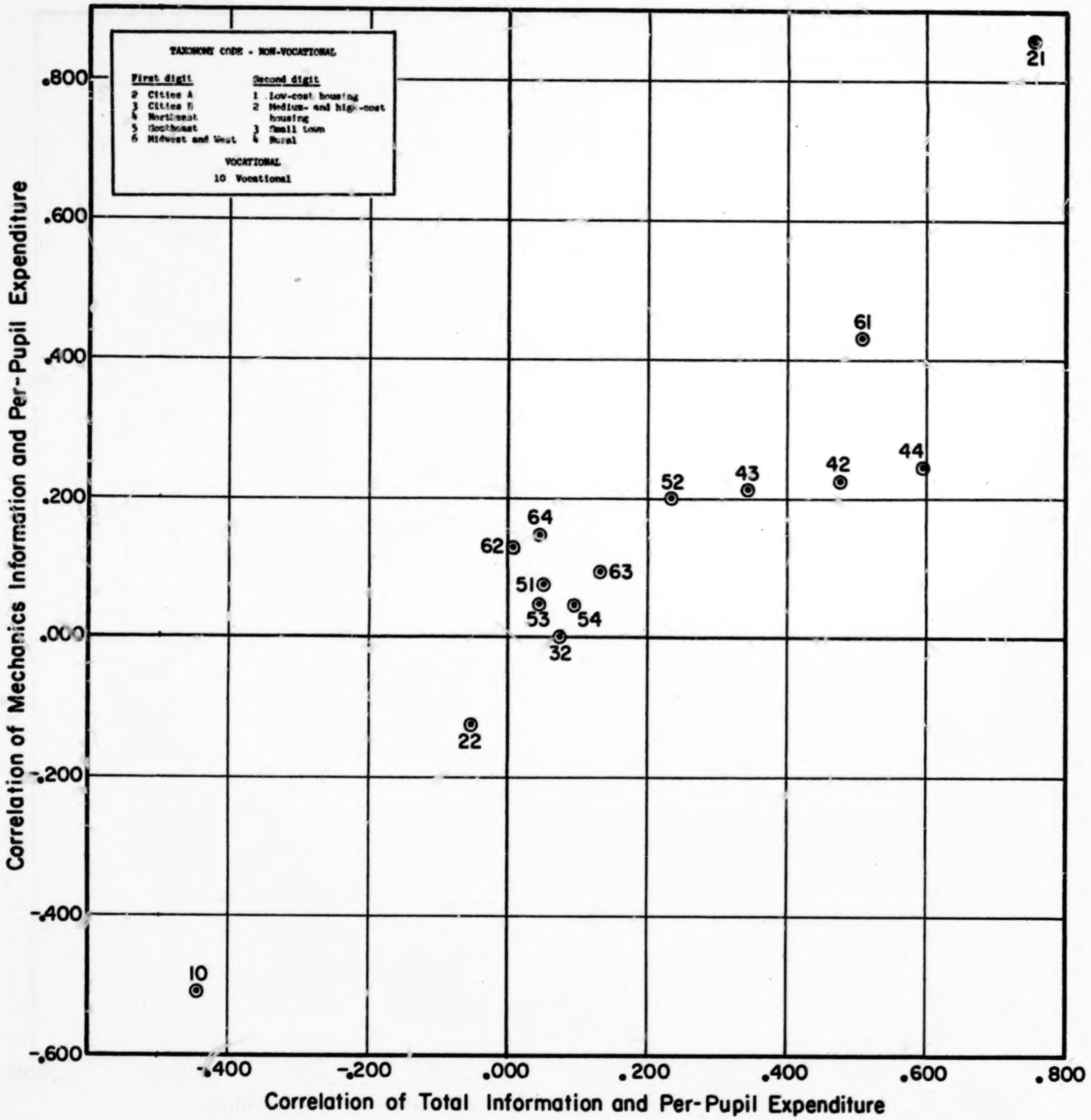


Figure 6-4. Correlation of Total Information (R-190) and Per-Pupil Expenditure (GSC-89) against Correlation of Mechanics Information (R-112) for Grade 10 Boys and Per-Pupil Expenditure (GSC-89) plotted by taxonomy groups

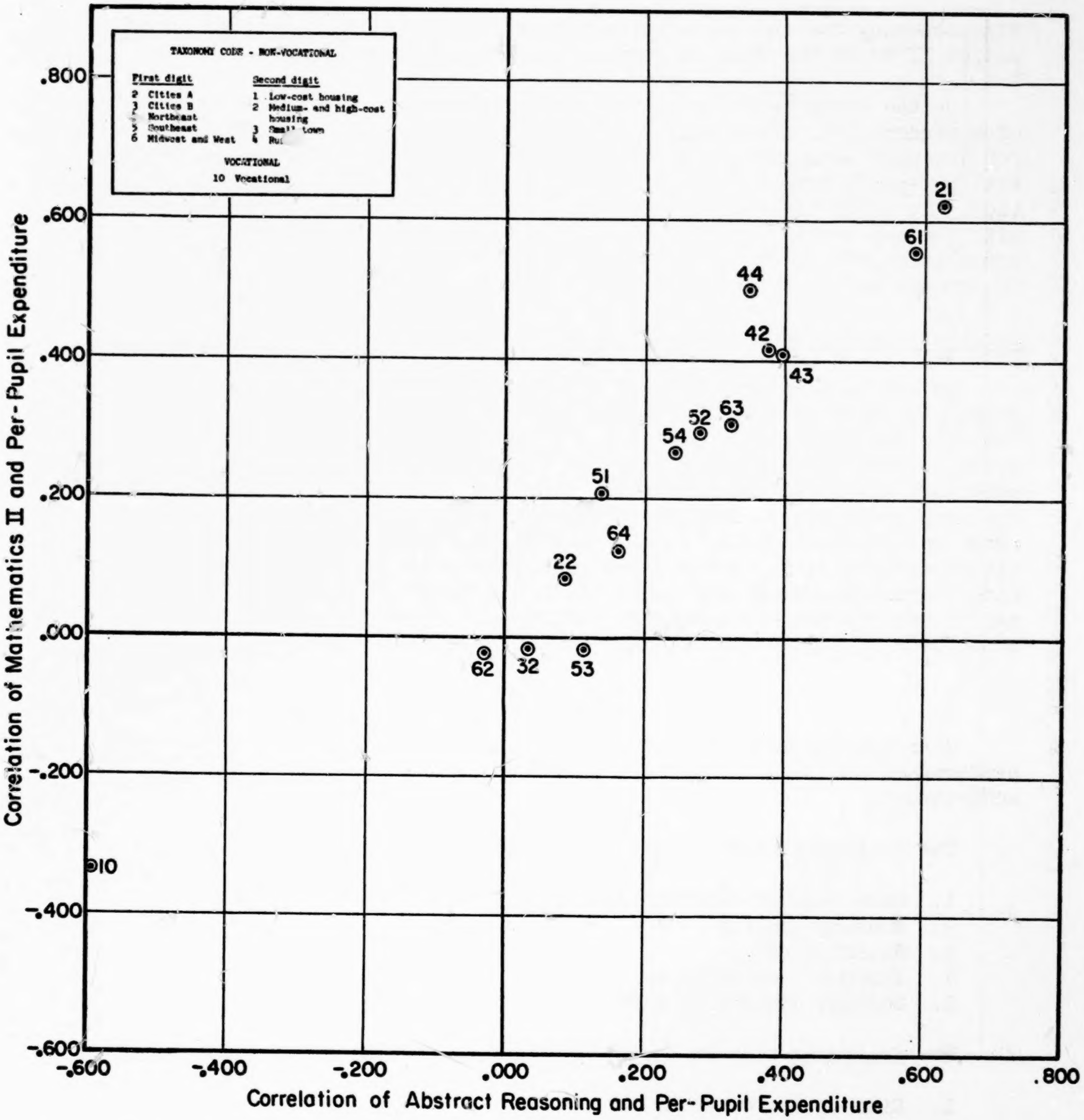


Figure 6-5. Correlation of Abstract Reasoning (R-290) and Per-Pupil Expenditure (GSC-89) against Correlation of Mathematics II (R-312) and Per-Pupil Expenditure (GSC-89) plotted by taxonomy groups

high tendency for the correlation patterns of Abstract Reasoning and Mathematics II to be the same in regard to per-pupil expenditure.

On the other hand, in Figure 6-6 it can be seen that there is much more of a tendency for the groups to lean in the direction of higher correlations for one pair versus the other. This figure is a plot of the correlations with per-pupil expenditure of both Abstract Reasoning and Mechanics Information. It is of interest here to note that there is very little correlation with the two tests for Group 22, high-quality housing, and a relatively high correlation for Group 21, low-quality housing. The schools in each of these two groups are in the same cities.

Correlations May be Substantially Different for Different Types of Schools

As has been reported above, the patterns of correlations may differ very greatly by type of school. Sometimes there may be a strong positive relationship for one type of school and a strong negative relationship for another group. Often the differing patterns by taxonomy group tend to cancel each other out and cause a low over-all correlation or even a zero correlation for the complete national sample of schools. It seems strongly indicated that correlations based on all schools combined usually yield results that are of little applicability to any given school or group of schools. On the other hand, correlational relationships within a homogeneous category of schools may be far sharper and maximally meaningful in helping explain the relationships between school characteristics and school outcomes.

Conclusions

Correlations were reported for several studies relating school mean test performance and school practices to school mean criterion performance and achievement.

The following factors correlated highest with school achievement:

1. Male teacher starting salary
2. Housing quality
3. Absentee rate
4. Per-pupil expenditure
5. College attendance rate

The following factors correlated below .20 with school achievement:

1. Size of senior class
2. Dropout rate
3. Average class size
4. Rural-urban status

School mean achievement test scores correlate very highly. For example:

1. English Total vs. Reading Comprehension - r = .917
2. English Total vs. Mathematics Total - r = .884
3. Mathematics Total vs. Reading Comprehension - r = .881

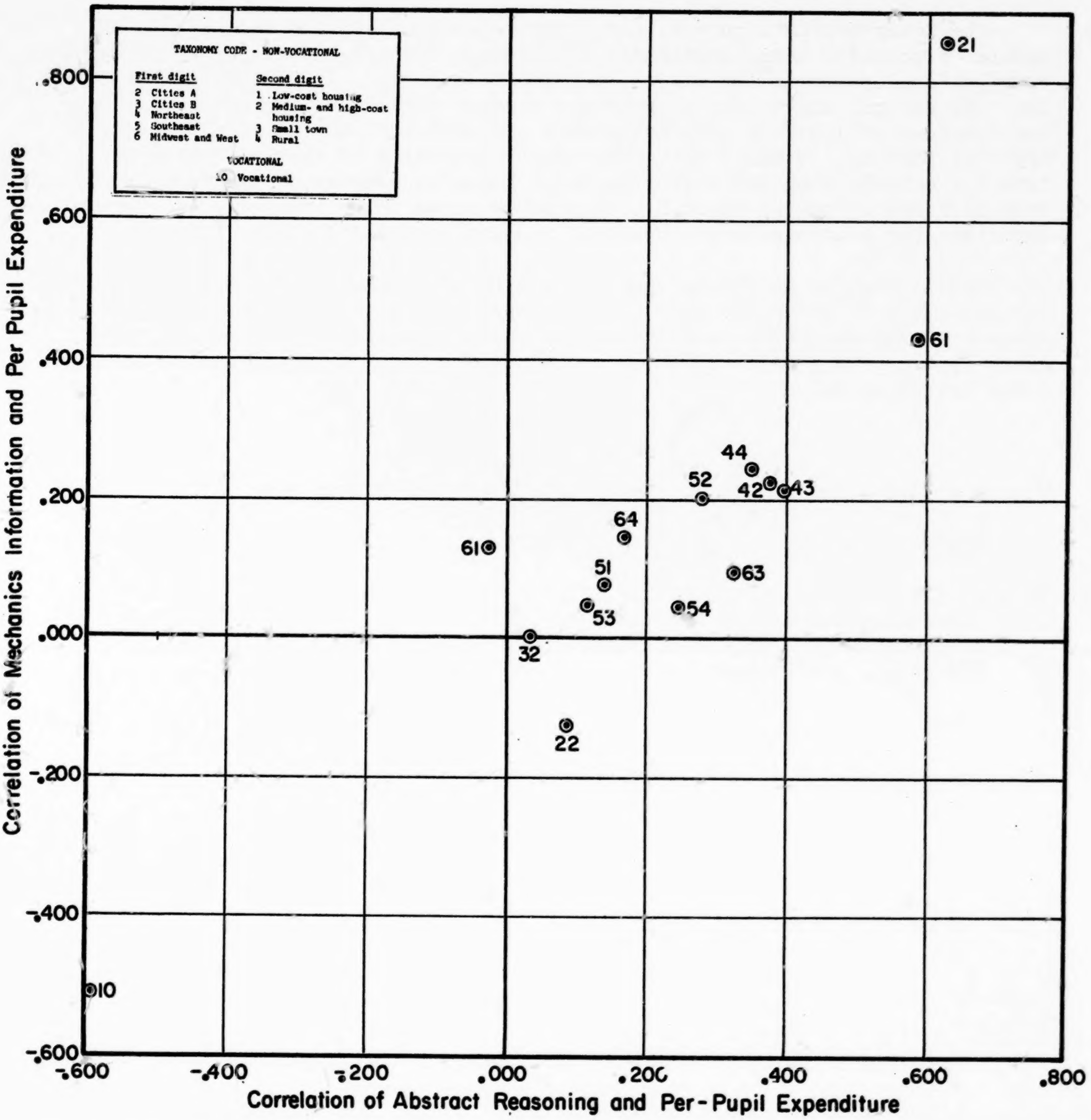


Figure 6-6. Correlation of Abstract Reasoning (R-290) and Per-Pupil Expenditure (GSC-89) against Correlation of Mechanics Information (R-112) for Grade 10 Boys and Per-Pupil Expenditure (GSC-89) plotted by taxonomy groups

The intercorrelations were also computed separately for each of the 17 groups of schools. Many systematic differences were found between the intercorrelational patterns for different types of schools. It is indicated that the regressional and factorial patterns of test and school characteristics combinations will differ noticeably when computed for samples of different types of schools. Studies are under way to determine if this will also be true for correlations and factor patterns based on samples of individuals from different types of schools. If this is found to be true, it will have important implications in psychometric research and testing.

The zero-order or simple correlations between school characteristics are difficult to interpret when examined above, and therefore final interpretations of the interrelationships of school characteristics and school outcomes should be deferred until later chapters in which multivariate relationships are explored.

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Chapter 7

GUIDANCE PROGRAMS, STUDENTS, SCHOOLS, AND COMMUNITIES

This chapter deals with the preliminary exploration of relationships among variables obtained from the Guidance Program Questionnaire, mean student test scores for each school, and the School Characteristics Questionnaire. The distributional characteristics and national population estimates of a number of the items from the Guidance Program Questionnaire were presented in Chapter 3; data from the School Characteristics Questionnaires and means of student test scores by school in Chapters 2, 4, 5, and 6. These chapters should be consulted to compare the treatment of the variables used in this analysis with the distributions shown in the previous chapters. Specifically, this chapter will begin the exploration of the following:

What are the characteristics of the communities served by the Guidance Program? Rural-urban location, city size, U.S. Office of Education Region, and housing quality were included in this study. Two of these items, rural-urban location and housing quality, were obtained from the School Characteristics Questionnaires; the remainder were obtained from data published by the U.S. Office of Education and the Bureau of the Census.

What are the characteristics of students served by the Guidance Programs? For the present analysis mean student test scores, summarized by school and by grades within schools, were included in the study.

What are the characteristics of schools that are served by Guidance Programs? A number of items from the General School Characteristics Questionnaire were included in the analysis. Several of these items deal with the historical characteristics of students who had previously attended the schools including absentee rate, dropout rate, percentage who attended college, percentage who attended junior college, and the percentage in remedial reading courses.

What are the relationships between Guidance Program functions? This chapter provides preliminary explorations of the relationships among a number of the Guidance Program Questionnaire items.

Method

Correlational and taxonomy analyses were used. A correlation matrix (Matrix IV) consisting of 50 items was obtained. These 50 variables were made up of 6 student mean test scores for each school, 13 school and community characteristics, and 31 Guidance Program characteristics. The variables in the matrix are described in Table 7-1, which shows the variable number, the questionnaire item or test code number, a description of the item, the unit of measurement, and means or proportions, standard deviations, and weighted N for each variable. Table 7-2 presents the correlation matrix for these variables. The incomplete data program was used for this analysis, resulting in a variable N for each correlation coefficient. School weights B were used to reproduce the national population of public senior high schools. The lower left portion of the correlation matrix shows the N divided by 10 for each correlation coefficient.

Taxonomy analyses were carried out on unweighted data for items 1 through 12, 27, and 29 of the Guidance Program Questionnaire in order to explore group differences that may account in part for some of the relationships. The rationale and description of the taxonomy groups are presented in Chapter 4. These data, being unweighted, do not provide population estimates and should be interpreted cautiously. It should be noted that the taxonomy analysis provides a means for comparing differences associated with location and socioeconomic levels of the schools.

Findings

The results of the analysis will be presented in two sections. Section 1 deals with the results of the correlational analysis and Section 2 with the results of the taxonomy group analysis.

Section One

It was felt that it would be useful for subsequent study to correlate a number of items of test performance, community characteristics, school characteristics, and characteristics of the Guidance Program on which to base more exhaustive analyses.

Guidance Programs and Community Characteristics

The community characteristics in this analysis were quality of housing (GSC-87), rural-urban location (GSC-88), senior class size (GSC-59), and grade structure (GSC-2). These variables have been discussed in previous chapters and will be dealt with only briefly here. These variables reflect relatively fixed characteristics of the environment which are, to a great extent, beyond the control of the school or the guidance program. It is recognized that the extent of control of the school may be a matter of degree; the first two, housing quality and rural-urban location, are clearly beyond the control of the school, describing basic characteristics of the environment. The next

Table 7-1

Tests, General School Characteristics Questionnaire Items, and Guidance Program Questionnaire Items used in the Guidance Program Matrix (Matrix IV) with Means, Standard Deviations and Weighted N's

Var. No.	Code	Item Description	M	SD	Weighted* N
1	R-180	Info. Test--boys, Mean Grade 10	122.6	22.4	18929
2	R-190	Info. Test--girls, Mean Grade 10	112.5	18.5	18746
3	R-230	English Test, Mean Grade 10	76.5	7.4	18791
4	R-340	Math Test--Total, Mean Grade 10	19.0	3.6	18180
5	R-250	Rdg. Comp. Mean Grade 10	25.8	5.3	18791
6	R-260	Creativity Test, Mean Grade 10	7.6	1.6	18791
7	GSC-1	Type of school, % comprehensive	94.0%	23.7%	18977
8	GSC-2	Grade structure, % k-12, 1-12	46.8%	49.9%	18977
9	GSC-9	Class size--Sci. & Math., No. students	22.8	6.2	18892
10	GSC-29	Absentee rate, %	5.2%	2.8%	18954
11	GSC-70	Dropout--boys, %	9.9%	8.6%	18800
12	GSC-72	College--boys, %	28.0%	26.3%	18643
13	GSC-75	Junior college, attendance, %	6.9%	9.4%	18695
14	GSC-77	Remedial reading, %	4.1%	5.1%	18831
15	GSC-87	Housing quality, % low cost housing	38.7%	48.7%	18977
16	GSC-88	Rural-urban, % rural or small town	68.1%	46.6%	18977
17	GSC-89	Per-pupil expenditure, dollars/year	$374.58	171.56	18064
18	GSC-101	Years as principal,	11.8	8.4	18954
19	GSC-59	Senior class size, No. students	85.7	126.8	18649
20	GP-1	Guidance Program, percent having	73.1%	44.3%	18915
21	GP-2Y**	Full-Time Counselors, number	0.55	1.04	13466
22	GS-3Y**	Part-Time Counselors, number	1.98	2.22	13708
23	GP-4Y**	Age of program, years	4.46	3.13	13514
24	GP-5c	Per cent having adequate test file	72.0%	44.9%	13713
25	GP-5d	Per cent having adequate space	56.9%	49.5%	13434

*Weight B used to reproduce public senior high school population

**Questions marked "Y" were answered only by schools having guidance programs

Table 7-1 (Continued)

Tests, General School Characteristics Questionnaire Items, and Guidance Program Questionnaire Items used in the Guidance Program Matrix (Matrix IV) with Means, Standard Deviations and Weighted N's

Var. No.	Code	Item Description	M	SD	Weighted* N
26	GP-5e	Per cent having adequate budget	55.1%	49.7%	13392
27	GP-5f	Per cent having adequate conf. files	77.5%	41.8%	13685
28	GP-5g	Per cent having adequate clerks	30.3%	45.9%	13255
29	GP-7a	Per cent conferences under 20 min.	58.7%	32.5%	13473
30	GP-8a	Problems--dissatisfaction over low grades	2.19**	.85**	13725
31	GP-8z	Problems--dissaction over vocation planning	3.22**	.81**	13863
32	GP-8h	Problems--dissatisfaction over education plans	3.37**	.78	13863
33	GP-12b	Per cent counselors who help students maximize potential	100.0%	0.0%	13765
34	GP-12o	Per cent counselors who help students with jobs and occupations	97.1%	16.7%	13752
35	GP-13	Per cent report of test results to parents	37.6%	48.4%	13771
36	GP-14	Time since last increase in counseling services, years	2.3	1.7	13803
37	GP-16	Plan to increase services, years	.66	.99	13735
38	GP-20	Per cent using tests	96.4%	19.1%	18862
39	GP-22a	Per cent using English achievements tests	44.1%	49.7%	16970
40	GP-22e	Per cent using foreign language achievement tests	14.1%	34.8%	11171
41	GP-27b	Adequate local college catalogues available,%	73.9%	43.9%	18788
42	GP-27e	Adequate military service info available, %	81.2%	39.1%	18787
43	GP-27f	Adequate occupational info available, %	67.0%	7.0%	18682
44	GP-28	No. methods used to present college info.	6.76	2.25	18791
45	GP-28	No. methods used to present scholarship info	5.06	2.37	18770
46	GP-28	No. methods used to present info on military	6.01	2.42	18791
47	GP-28	No. methods used to present occupational info	6.46	2.62	18770
48	GP-29a	Per cent offering Life Adjust. instruction	47.0%	49.9%	19168
49	GP-29b	Per cent offering Occupational Info instruct.	58.4%	49.3%	19168
50	GP-29f	Per cent offering How to Study instruction	52.1%	50.0%	19168

*Weight B used to reproduce public senior high school population

**Scale values on the following continuum: (1) never, (2) very rarely (3) occasionally (4) frequently (5) very frequently

Table 7-2

Matrix IV. Correlations of School Characteristics Items and Selected Test Means for 10th Grade (Public Senior High Schools)

Guidance Program Matrix

VARIABLE NUMBER	INFORMATION TEST--BOYS (R-190) 1	INFORMATION TEST--GIRLS (R-190) 2	ENGLISH TOTAL (R-230) 3	MATHEMATICS TEST--TOTAL (R-340) 4	READING COMPREHENSION (R-250) 5	CREATIVITY TEST (R-260) 6	TYPE OF SCHOOL 7	GRADE STRUCTURE 8	CLASS SIZE--SCI. & MATH 9	ABSENTEE RATE 10	DROP-OUT--BOYS 11	COLLEGE--BOYS 12	PERCENT JUNIOR COLLEGE 13	PERCENT REMEDIAL READING 14	HOUSING QUALITY 15	RURAL-URBAN 16	PER PUPIL EXPENDITURE 17	YEARS AS PRINCIPAL 18	SENIOR CLASS SIZE 19	GUIDANCE PROGRAM 20	FULL-TIME COUNSELORS 21	PART-TIME COUNSELORS 22	AGE OF PROGRAM 23	ADEQ. FACILITIES--TEST FILE 24	ADEQ. FACILITIES--SPACE 25	VARIABLE NUMBER
1		.881	.889	.872	.915	.865	.113	-.147	-.140	-.368	-.155	.330	.017	-.016	.384	.165	.358	-.048	.187	.203	.171	-.030	.197	.178	.149	1
2	1873		.846	.867	.879	.828	.039	-.116	-.224	-.371	-.210	.319	.046	-.043	.372	.083	.419	-.075	.109	.205	.091	-.064	.137	.213	.145	2
3	1874	1855		.884	.917	.829	.139	-.133	-.116	-.360	-.138	.291	.052	-.049	.361	.128	.236	-.029	.132	.179	.090	-.020	.133	.147	.130	3
4	1813	1795	1813		.881	.820	.088	-.124	-.146	-.343	-.177	.311	.036	-.009	.379	.109	.318	-.017	.141	.210	.100	-.029	.113	.112	.118	4
5	1874	1855	1879	1813		.904	.106	-.172	-.143	-.335	-.177	.341	.042	-.008	.382	.169	.314	-.054	.197	.261	.135	-.000	.190	.174	.141	5
6	1874	1855	1879	1813	1879		.079	-.148	-.184	-.339	-.192	.305	.033	-.007	.368	.138	.374	-.080	.164	.213	.116	-.021	.183	.171	.151	6
7	1874	1856	1860	1799	1860	1860		.035	.080	-.033	-.029	-.043	.019	-.025	.078	-.066	-.122	.006	.051	-.030	.009	-.046	-.042	-.002	.044	7
8	1874	1856	1860	1799	1860	1860	1898		-.323	-.113	-.053	-.147	.020	-.171	-.200	-.433	-.040	-.003	-.407	-.317	-.297	-.117	-.304	-.171	-.153	8
9	1865	1847	1852	1790	1852	1852	1889	1889		.290	.202	-.019	-.058	.084	.042	.399	-.333	.146	.416	.138	.292	.175	.244	.081	.081	9
10	1872	1854	1858	1797	1858	1858	1895	1895	1887		.232	-.148	-.023	.058	-.096	.088	-.162	.000	.114	.030	.091	.072	.079	-.038	.068	10
11	1868	1849	1854	1793	1854	1854	1880	1880	1872	1878		-.104	-.061	.048	-.094	.104	-.171	.067	.144	-.095	.165	.093	.138	-.028	-.075	11
12	1852	1834	1844	1782	1844	1844	1864	1864	1856	1862	1860		.179	.094	.245	.208	.198	.025	.247	.047	.281	.059	.154	.126	.075	12
13	1856	1837	1847	1788	1847	1847	1870	1870	1861	1867	1863	1858		.044	.022	-.019	.093	-.015	.001	.030	-.058	-.056	-.035	-.004	.026	13
14	1860	1841	1846	1785	1846	1846	1883	1883	1874	1881	1866	1850	1857		.008	.139	.100	.045	.179	.158	.161	.163	.224	.031	.017	14
15	1874	1856	1860	1799	1860	1860	1898	1898	1889	1895	1880	1864	1870	1883		.228	.126	.053	.232	.150	.197	.059	.162	.098	.101	15
16	1874	1856	1860	1799	1860	1860	1898	1898	1889	1895	1880	1864	1870	1883	1898		-.012	.155	.576	.249	.442	.157	.360	.144	.137	16
17	1783	1764	1769	1710	1769	1769	1806	1806	1798	1804	1789	1773	1780	1794	1806	1806		-.064	.035	.156	.072	-.021	.106	.059	.034	17
18	1872	1853	1858	1797	1858	1858	1895	1895	1887	1893	1878	1862	1867	1881	1895	1895	1804		.125	.007	.099	-.011	.120	-.064	-.042	18
19	1854	1835	1845	1786	1845	1845	1865	1865	1856	1863	1860	1853	1858	1853	1865	1865	1778	1863		.264	.639	.360	.422	.171	.149	19
20	1868	1849	1854	1793	1854	1854	1891	1891	1883	1889	1874	1858	1863	1877	1891	1891	1800	1889	1859		.050	-.003	-.008	.097	.063	20
21	1323	1315	1311	1270	1311	1311	1347	1347	1338	1344	1331	1316	1318	1332	1347	1347	1282	1346	1314	1347		-.006	.324	.211	.181	21
22	1347	1334	1335	1287	1335	1335	1371	1371	1362	1369	1355	1340	1343	1356	1371	1371	1308	1371	1338	1371	1329		.264	.022	-.029	22
23	1328	1314	1315	1267	1315	1315	1351	1351	1345	1349	1336	1320	1323	1342	1351	1351	1286	1351	1319	1351	1307	1331		.266	.123	23
24	1348	1335	1336	1287	1336	1336	1371	1371	1365	1369	1356	1340	1343	1357	1371	1371	1306	1371	1339	1371	1325	1350	1336		.424	24
25	1320	1307	1308	1259	1308	1308	1343	1343	1337	1341	1328	1318	1316	1329	1343	1343	1278	1343	1311	1343	1297	1322	1308	1337		25
26	1317	1304	1305	1256	1305	1305	1339	1339	1333	1337	1323	1315	1312	1330	1339	1339	1276	1339	1310	1339	1293	1313	1310	1333	1328	26
27	1345	1332	1333	1284	1333	1333	1369	1369	1362	1366	1353	1337	1340	1354	1369	1369	1304	1368	1336	1369	1322	1346	1331	1358	1343	27
28	1302	1289	1290	1242	1290	1290	1325	1325	1319	1323	1311	1301	1298	1317	1325	1325	1265	1325	1296	1325	1281	1306	1296	1315	1310	28
29	1323	1310	1311	1265	1311	1311	1347	1347	1341	1345	1332	1316	1321	1333	1347	1347	1287	1347	1317	1347	1301	1325	1319	1332	1306	29
30	1349	1336	1337	1288	1337	1337	1373	1373	1366	1370	1357	1341	1344	1358	1373	1373	1310	1372	1340	1373	1326	1350	1335	1355	1332	30
31	1363	1349	1350	1302	1350	1350	1386	1386	1380	1384	1371	1355	1358	1372	1386	1386	1321	1386	1354	1386	1340	1364	1349	1369	1341	31
32	1363	1349	1350	1302	1350	1350	1386	1386	1380	1384	1371	1355	1358	1372	1386	1386	1321	1386	1354	1386	1340	1364	1349	1369	1341	32
33	1353	1339	1340	1292	1340	1340	1376	1376	1370	1374	1361	1345	1350	1364	1376	1376	1314	1376	1344	1376	1330	1354	1339	1359	1334	33
34	1351	1338	1339	1291	1339	1339	1375	1375	1369	1373	1360	1344	1347	1361	1375	1375	1310	1375	1342	1375	1329	1353	1343	1358	1330	34
35	1353	1340	1341	1293	1341	1341	1377	1377	1371	1375	1362	1346	1349	1362	1377	1377	1312	1377	1345	1377	1331	1355	1340	1362	1334	35
36	1356	1343	1346	1298	1346	1346	1380	1380	1374	1378	1365	1349	1352	1366	1380	1380	1315	1380	1348	1380	1334	1358	1343	1363	1335	36
37	1350	1339	1338	1290	1338	1338	1374	1374	1367	1371	1359	1343	1346	1359	1374	1374	1311	1373	1341	1374	1327	1352	1336	1356	1328	37
38	1862	1844	1849	1768	1849	1849	1886	1886	1878	1884	1869	1853	1858	1871	1886	1886	1795	1884	1854	1882	1339	1364	1344	1364	1336	38
39	1678	1665	1663	1608	1663	1663	1697	1697	1689	1695	1685	1672	1675	1688	1697	1697	1622	1695	1671	1695	1257	1274	1257	1274	1244	39
40	1104	1098	1097	1063	1097	1097	1117	1117	1113	1115	1107	1101	1103	1115	1117	1117	1069	1115	1103	1117	882	897	888	899	894	40
41	1856	1838	1842	1781	1842	1842	1879	1879	1870	1877	1862	1846	1852	1864	1879	1879	1792	1877	1847	1875	1344	1368	1348	1368	1340	41
42	1856	1837	1842	1781	1842	1842	1879	1879	1870	1876	1862	1846	1851	1864	1879	1879	1792	1876	1847	1875	1343	1368	1348	1368	1340	42
43	1845	1826	1831	1769	1831	1831	1868	1868	1860	1866	1851	1835	1840	1854	1868	1866	1779	1866	1835	1864	1339	1363	1343	1363	1335	43
44	1856	1838	1843	1782	1843	1843	1879	1879	1871	1877	1863	1847	1852	1864	1879	1879	1788	1877	1848	1875	1345	1370	1350	1370	1342	44
45	1854	1836	1841	1780	1841	1841	1877	1877	1869	1875	1861	1845	1850	1862	1877	1877	1788	1875	1845	1873	1343	1367	1348	1368	1340	45
46	1856	1838	1843	1782	1843	1843	1879	1879	1871	1877	1863	1847	1852	1864	1879	1879	1788	1877	1848	1875	1345	1370	1350	1370	1342	46
47	1854	1836	1841	1780	1841	1841	1877	1877	1869	1875	1861	1845	1850	1862	1877	1877	1788	1875	1845	1873	1343	1367	1348	1368	1340	47
48	1893	1875	1879	1818	1879	1879	1898	1898	1889	1895	1880	1864	1870	1883	1898	1898	1806	1895	1865	1891	1347	1371	1351	1371	1343	48
49	1893	1875	1879	1818	1879	1879	1898	1898	1889	1895	1880	1864	1870	1883	1898	1898	1806	1895	1865	1891	1347	1371	1351	1371	1343	49
50	1893	1875	1879	1818	1879	1879	1898	1898	1889	1895	1880	1864	1870	1883	1898	1898	1806	1895	1865	1891	1347	1371	1351	1371	1343	50

Note.- In computing this matrix school data were weighted (weights B) to reproduce the national population of public senior high schools. The computer program for incomplete data was used. The lower left portion of the matrix shows the N divided by 10 for each correlation.

Table 7-2 (continued)

Matrix IV. Correlations of School Characteristics Items and Selected Test Means for 10th Grade (Public Senior High Schools)

Guidance Program Matrix

VARIABLE NUMBER	26 ADEQ. FACILITIES--BUDGET	27 ADEQ. FACILITIES--CONF.RECORDS	28 ADEQ. FACILITIES--CLERKS	29 LENGTH COUNSELING CONFERENCES	30 PROBLEMS--DISSAT. RE LOW GRADES	31 PROBLEMS--VOCAT'L PLANNING	32 PROBLEMS--EDUCAT'L PLANS	33* DUTIES--HELP REALIZE POTENTIAL	34 DUTIES--VOCAT'L COUNSELING	35 REPT'G TEST RESULTS TO PARENTS	36 RECENT INCREASE IN SERVICE	37 PLANS TO INCREASE SERVICES	38 USE OF TESTS	39 ENGLISH ACHIEVEMENT TESTS	40 FOREIGN LANG. ACHIEVEM'T TESTS	41 COLLEGE CATALOGS--NON-COMMUTING	42 MILITARY SERV.--PRINTED MATTER	43 OCCUPATIONS--PRINTED MATTER	44 PRESENTING INFO. ON COLLEGE	45 PRESENT'G INFO.ON SCHOLARSHIPS	46 PRESENTING INFO. ON MILITARY	47 PRESENT'G INFO.ON OCCUPATIONS	48 LIFE ADJUSTMENT COURSE	49 OCCUPATIONAL INFORMATION	50 HOW TO STUDY	VARIABLE NUMBER
1	.329	.175	.214	.031	-.109	.273	.275		.087	.176	.083	.044	.204	.097	.165	.178	.127	.177	.176	.143	.219	.206	.134	.091	.030	1
2	.335	.190	.201	.018	-.121	.237	.243		.111	.186	.045	.023	.171	.087	.175	.143	.144	.161	.218	.122	.208	.216	.127	.085	.006	2
3	.253	.140	.134	.043	-.116	.218	.201		.096	.162	.040	.022	.145	.128	.173	.162	.114	.160	.169	.105	.193	.188	.119	.051	.018	3
4	.279	.140	.191	.025	-.086	.209	.194		.069	.192	.050	.116	.163	.121	.133	.128	.119	.205	.173	.151	.194	.195	.139	.101	.049	4
5	.289	.181	.195	.010	-.085	.233	.233		.103	.180	.070	.032	.160	.123	.186	.207	.147	.188	.235	.152	.238	.235	.132	.088	.030	5
6	.327	.180	.201	.028	-.055	.232	.230		.104	.170	.068	.053	.126	.106	.162	.170	.095	.173	.192	.117	.211	.200	.137	.089	.032	6
7	.073	.004	-.039	.109	-.072	.056	.099		-.037	-.017	-.022	.042	.065	.073	.054	.147	.076	.020	.035	.086	.102	.036	.084	.039	.002	7
8	-.129	-.173	-.056	-.056	-.135	-.193	-.216		-.097	-.073	-.187	-.002	-.117	-.116	-.152	-.231	-.115	-.209	-.207	-.254	-.242	-.278	-.030	-.078	-.069	8
9	-.014	.133	-.031	.053	.127	.184	.206		.105	.033	.025	-.008	.090	.103	.112	.147	.105	.149	.074	.209	.074	.191	-.002	-.003	.053	9
10	-.075	.032	-.031	.047	.085	-.071	-.051		-.023	-.067	.035	.051	.042	.014	.029	.062	.033	.010	-.076	.027	-.083	-.017	.072	-.043	.036	10
11	-.088	-.030	-.011	-.084	.117	-.036	.004		.018	-.026	.050	-.025	.001	.007	-.001	.006	.026	.020	-.120	-.064	-.100	-.074	-.050	-.096	-.027	11
12	.136	.115	.160	.059	.025	.141	.227		.075	.121	.072	.006	-.007	.022	.117	.087	.059	.111	.145	.098	.088	.077	.037	.019	-.061	12
13	.041	.071	.113	.044	-.007	-.047	-.027		-.039	.079	-.043	.068	.017	.049	-.032	.058	-.017	.102	-.028	.012	-.004	-.045	-.011	-.001	-.004	13
14	.049	.041	.048	-.063	.090	-.020	.009		.021	.076	.130	-.022	.067	.063	.006	.016	-.032	.042	.062	.054	.057	.067	-.021	.055	.079	14
15	.197	.118	.170	.069	.091	.220	.205		.100	.126	.181	.016	.082	.063	.120	.113	.126	.177	.157	.145	.129	.172	.059	.020	-.012	15
16	.133	.131	.084	.003	.140	.178	.234		.076	.146	.144	.040	.065	.098	.179	.193	.118	.225	.173	.235	.200	.270	.033	.093	.048	16
17	.272	.040	.179	-.042	-.013	.146	.114		-.087	.039	.065	.061	.070	.061	.067	.016	-.027	.060	.080	.024	.079	.079	.120	.140	.031	17
18	-.013	-.002	.068	.028	.035	.066	.053		.049	-.004	.004	-.011	-.057	.004	-.003	-.003	.001	.026	.031	.076	.032	.077	.010	.076	-.005	18
19	.179	.166	.145	-.024	.180	.201	.231		.065	.082	.195	-.024	.098	.117	.136	.204	.104	.242	.213	.273	.217	.285	.081	.117	.075	19
20	.095	.157	-.091	-.108	-.022	.105	.040		-.015	.007	.041	.082	.232	.143	.113	.224	.170	.288	.388	.315	.375	.461	.194	.227	.229	20
21	.253	.195	.163	.019	.195	.212	.230		.076	.128	.150	-.024	.051	.105	.179	.142	.014	.204	.126	.190	.121	.220	.009	.070	-.023	21
22	-.069	-.012	.046	-.038	.100	-.037	-.043		.039	.019	.145	-.019	.038	-.076	-.022	-.023	-.038	.015	.010	.073	-.028	.080	.081	.038	.116	22
23	.237	.200	.255	.030	.182	.119	.173		.128	.031	.387	.001	.045	.032	.160	.163	.126	.175	.152	.241	.168	.227	.140	.199	.185	23
24	.448	.493	.225	.144	.001	.204	.255		.082	.079	.220	-.015	.050	.087	.086	.206	.133	.263	.188	.244	.195	.225	.112	.068	.096	24
25	.448	.406	.303	.172	-.051	.222	.246		.096	.107	.053	-.018	.017	.011	.114	.149	.137	.289	.216	.289	.250	.321	.033	.127	.039	25
26		.390	.383	.101	-.032	.310	.290		.074	.090	.098	-.014	.076	.136	.079	.208	.181	.319	.180	.265	.211	.290	.176	.166	.082	26
27	1339		.257	.068	-.017	.234	.258		.089	.054	.148	-.001	.025	.049	.086	.220	.089	.295	.105	.206	.148	.270	.053	.105	.034	27
28	1318	1321		.111	-.017	.162	.227		.026	.122	.096	.004	.045	.079	.050	.105	.083	.168	.172	.202	.125	.208	.142	.177	.096	28
29	1300	1329	1289		.089	.262	.230		.042	.050	.071	.136	.078	.023	.057	.136	.073	.086	.069	.131	.055	.132	.033	.102	-.019	29
30	1325	1355	1312	1333		.125	.099		-.009	.043	.077	.007	.052	-.065	.086	.036	-.011	-.001	.063	.062	.087	.055	-.001	.004	-.049	30
31	1337	1366	1323	1345	1372		.702		.100	.142	.111	.057	.174	.089	.151	.212	.186	.311	.223	.306	.229	.315	.066	.075	-.004	31
32	1337	1366	1323	1345	1372	1386			.177	.134	.167	.051	.121	.116	.168	.207	.160	.283	.240	.293	.208	.285	.053	.059	.007	32
33	1329	1359	1316	1335	1365	1374	1374																			33
34	1325	1355	1312	1339	1359	1373	1373	1369		-.046	.138	-.005	-.016	-.023	.072	-.008	.102	.045	.154	.128	.075	.146	.103	.103	.139	34
35	1330	1359	1314	1338	1361	1375	1375	1365	1364		.085	.098	.040	.058	.137	.061	.068	.129	.133	.177	.140	.182	.072	.117	.066	35
36	1331	1360	1317	1339	1364	1378	1378	1368	1367	1369		.072	.070	.036	.080	.164	.074	.111	.064	.119	.095	.152	.112	.072	.112	36
37	1324	1353	1310	1332	1357	1371	1371	1361	1360	1362	1365		.078	.000	.073	-.038	.042	.049	.064	.135	.118	.152	.042	.093	.086	37
38	1332	1361	1318	1340	1365	1379	1379	1369	1368	1370	1373	1366		.032	.018	.016	.134	.151	.092	.101	.133	.113	.050	.075	.081	38
39	1248	1269	1234	1252	1277	1286	1286	1279	1275	1277	1280	1274	1690		.397	.122	.097	.091	.096	.138	.125	.118	.082	.051	.091	39
40	899	902	892	888	903	903	903	906	906	896	900	895	1110	1113		.152	.077	.076	.186	.184	.170	.190	.074	.037	-.001	40
41	1336	1366	1323	1344	1369	1383	1383	1373	1372	1374	1377	1370	1870	1692	1113		.337	.363	.250	.225	.221	.263	.102	.132	.070	41
42	1336	1365	1322	1344	1369	1383	1383	1373	1372	1374	1377	1373	1869	1692	1112	1874		.542	.242	.230	.245	.250	.138	.122	.082	42
43	1331	1361	1318	1339	1365	1378	1378	1369	1367	1369	1372	1368	1859	1679	1107	1863	1865		.310	.299	.326	.395	.143	.171	.123	43
44	1338	1367	1324	1346	1371	1385	1385	1375	1374	1376	1379	1372	1870	1696	1116	1872	1872	1861		.715	.750	.659	.261	.244	.193	44
45	1338	1365	1324	1344	1369	1383	1383	1373	1372	1374	1377	1370	1868	1694	1116	1870	1870	1859	1877		.690	.653	.224	.244	.197	45
46	1338	1367	1324	1346	1371	1385	1385	1375	1374	1376	1379	1372	1870	1696	1116	1872	1872	1861	1879	1877		.685	.214	.240	.147	46
47	1338	1365	1324	1344	1369	1383	1383	1373	1372	1374	1377	1370	1868	1694	1116	1870	1870	1859	1877	1877	1877		.292	.338	.259	47
48	1339	1369	1325	1347	1373	1386	1386	1376	1375	1377	1380	1374	1886	1697	1117	1879	1879	1868	1879	1877	1879	1877		.515	.498	48
49	1339	1369	1325	1347	1373	1386	1386	1376	1375	1377	1380	1374	1886	1697	1117	1879	1879	1868	1879	1877	1879	1877	1917		.504	49
50	1339	1369	1325	1347	1373	1386	1386	1376	1375	1377	1380	1374	1886	1697	1117	1879	1879	1868	1879	1877	1879	1877	1917	1917		50

Note.- In computing this matrix school data were weighted (weights B) to reproduce the national population of public senior high schools. The computer program for incomplete data was used. The lower left portion of the matrix shows the N divided by 10 for each correlation.

* Correlations were not computed on this variable because of zero variance.

two, grade structure and senior class size, are descriptive of characteristics within the school; however, they are acknowledged to be strongly influenced by the characteristics of the community.

The correlations for community characteristics, as shown in Table 7-2, are among the highest that appear in the table. The lowest correlation for this group of variables was between housing quality and grade structure, .20, and the highest between rural-urban location and senior class size, .58. The correlations of senior class size and grade structure with rural-urban location and housing quality offer evidence to show that a good part of these variables are community-related differences. The highest correlation among the community variables with mean student test scores is with quality of housing, the correlations running .37 and .38. Low positive correlations are shown with the remaining items.

Inspection of the table shows that the community variables are, in general, correlated low-positive with the items from the Guidance Program Questionnaire (Variables 20-50 in Table 7-1). The correlations of the community variables with having a guidance program (GP-1), full-time and part-time counselors (GP-2Y and GP-3Y), and the age of the program (GP-4Y) show relationships of the major community-guidance parameters. These correlations are higher than those obtained with the remainder of the guidance variables.

Having a guidance program (GP-1) was positively correlated with all of the community variables, the highest correlation being with grade structure (GSC-2), -.32, and the lowest correlation with housing quality (GSC-87), .15. In general, the correlations show that guidance programs are more frequently found in communities having schools with separate senior or junior-senior high schools; in which the quality of housing is somewhat above the average; in urban rather than rural areas; in larger-than-average schools; and in schools whose students have above-average ability.

The number of counselors and the age of the program were obtained only for those schools having guidance programs. In spite of this fact, correlations continue to be in a positive direction for the community variables. Among these variables the highest correlation is between the number of full-time counselors (GP-24) and the size of the senior class (GSC-59), .64. Other high correlations were obtained between the number of full-time counselors and rural-urban location (GSC-88), .44, and between the age of the program (GP-44) and the size of the senior class, .42. The correlations of student test scores with the number of full-time counselors were relatively low, those for part-time counselors (GP-3Y) approaching zero.

Guidance Programs, Schools, and Student Test Scores

The school variables included in this analysis were the type of school (GSC-1, general comprehensive versus others), class size in science and math (GSC-9), absentee rate (GSC-29), dropout rate for boys (GSC-70), college attendance rate for boys (GSC-72), percentage of students who have gone on to junior college (GSC-75), percentage of students in a remedial reading program (GSC-77), per-pupil expenditures (GSC-89), and the number of years the principal has served in that capacity (GSC-101). In general, the type of school and the number of years the principal has served as such did not appear to correlate consistently with any of the remaining variables.

In general, guidance program items are correlated positively with the test scores. The only exception--that is, a true negative correlation--was dissatisfaction over low grades (GP-8a).

Whether the school has a person assigned to guidance (GP-1) correlates with the test means, ranging from .18 for English Total (R-230) to .26 for Reading Comprehension (R-250). Generally, one could conclude from the six correlations that guidance programs more often serve schools in which students have somewhat higher-than-average ability. It appears that the number of full-time counselors is correlated with test scores; however, the number of part-time counselors is not. The age of the guidance program (GP-4Y) is also associated with higher mean test scores. Variables 24 through 28 (GP-5c through 5g) consider the adequacy of various facilities for guidance. The highest relationship is found in adequacy of the budget (GP-5e). This result may be interpreted to mean that the budget is generally perceived to be adequate or meeting present needs in those schools with the higher mean test scores. Correlations for the other items on adequacy of facilities are all positive and significant.

The length of counseling conferences (GP-7a) does not appear to be associated with test scores. Variables 30 through 32 are concerned with problems brought to counselors (GP-8a, 8g, and 8h). There appears to be a slight tendency for the amount of counseling connected with dissatisfaction with low grades to be associated with lower ability scores; however, the relationship is quite small. On the other hand, the amount of counseling connected with problems of vocational planning and educational planning are positively and significantly associated with mean test scores. Reporting test results to parents (GP-13) correlated positively with test scores. Recent increase in guidance services (GP-14) and plans to increase such services (GP-16) do not appear to be associated with test scores.

Correlations for whether or not the school uses tests (GP-22a) are attenuated due to the 96% to 4% split in the dichotomy. The correlations with the test scores are variable. The lowest correlation, .13, is with the Creativity Test (R-260) and the highest correlation is with the Information Test for 10th grade boys (R-190). Methods of presenting information on colleges, scholarships, military service, and occupations (Variables 44 through 47, from GP-28) also appear to correlate significantly with mean test scores. The correlations with having guidance-related courses (Variables 48 through 50, from GP-29) are interesting. In this group the correlations with the test scores are highest with whether or not the school has instruction in "life adjustment", and are lowest with whether the school has instruction in "how to study".

Guidance Program Functions[1]

Having a guidance program is associated with adequacy of various types of printed matter (GP-27) for counseling. These correlations offer evidence for concrete functions performed by a guidance program--that is, making sure that appropriate printed matter is available on colleges and occupations. Efforts toward communicating information to students (GP-28) are also suggestive of unique functions that may be performed by guidance programs. Presentation of information on occupations showed the highest correlation; the smallest relationship was with presenting information on scholarships. Having a guidance program is also associated with offering instruction in life adjustment, occupational information, and how to study.

The correlation between having a guidance program (GP-1) and use of tests (GP-20) was .23. However, this correlation is markedly attenuated due to the adverse split of the latter item. The maximal phi-coefficient was calculated (Guilford, 1950) and proved to be .40. Thus, the obtained correlation relative to the maximum possible correlation is quite high.

Counselors[2]

As with the item on use of tests, a good part of the variance in the number of counselors employed (GP-21) may be explained in terms of school-community characteristics. This is evidenced by the following correlations: -.30 with grade structure; .29 for size of the math and science classes; .20 for housing quality; .44 for rural-urban location; and .64 for senior class size.

The correlations for part-time counselors are consistently lower than for those for the number of full-time counselors. The relationship between the number of full-time and the number of part-time counselors is near zero.

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[1] A number of items were requested from all schools irrespective of whether or not they had a guidance program. Those included in this analysis were Variables 38-50 (GP 20-29) in Table 7-1 on the use of tests, types of tests used, availability of printed matter for communicating with students, methods for presenting information to students, and guidance-related courses. The other variables, 21-37 (GP 2-16), were requested only from those schools who have a guidance program. In reviewing these correlations it should be kept in mind that part of the relationships may be due to correlation with community factors.

[2] The relationship of number of full-time and part-time counselors to other variables offers some difficulty in interpretation, due to the fact that the distributions were markedly skewed. It should also be remembered that the relationships suffered from a restriction of range. That is, those who answered these items represent the 73% of the sample who said they have a guidance program. In spite of this fact, significant relationships were obtained.

The number of counselors (GP-2Y and 3Y) is also associated with age of the guidance program (GP-4Y). This means that the longer the program has been in existence the greater the number of full- or part-time counselors. It should be noted, however, that the age of the program is also closely associated with the school-community variables, correlating -.30 with grade structure, .36 with rural-urban, and .42 with senior class size. This complex set of relationships again suggests the need for controlling the location factor.

Adequacy of Facilities

The first point that might be noted about the options of Item 5 is the intercorrelations between them (Variables 24-28). These correlations range from .22 to .49, which appears to indicate a general characteristic of adequacy or inadequacy of facilities, but also a good deal of specificity for each of the items. Adequacy of facilities appears to be related to length of the counseling conferences (GP-7). The highest relationship is with adequacy of space and the lowest with adequacy of a file for confidential records.

Use of Tests

Whether the school uses standardized tests (GP-20) shows some surprisingly high correlations, considering the fact that the values are adversely affected by the 97% to 3% split[3].

Reporting test results to parents (GP-13) appears to show a unique pattern of correlations associated with student abilities and vocational-educational plans as indicated by the correlations with Variables 12, 31, 32, 43 through 47, and 49. There is some association, too, with the number of full-time counselors, adequacy of space, and adequacy of clerical assistance, possibly reflecting administrative decisions. The use of tests is dealt with in greater detail in Chapter 8.

Adequacy of Printed Matter

Correlations among Variables 41, 42, and 43 are only moderate, the highest being between military service and occupations. This suggests some degree of adequacy of printed materials in schools; however, there is also sufficient uniqueness so that each item could be used to study modes of operation of Guidance Programs.

Section Two

Comparison of Guidance Practices Among Taxonomy Groups

This section presents results of the analysis by school taxonomy group. The constitution of the taxonomy groups of schools is described in Chapter 4. This analysis has the advantage of showing group differences attributable to certain community variables. It should be noted that region was included in this analysis but was not included in the correlational analysis in Section One of this chapter.

There are two major purposes in presenting this analysis. First, by showing group differences attributable to community variables it will be possible to draw inferences as to the importance of controlling these differences for subsequent analyses. Secondly, the correlation among the group averages may be noted and compared to the correlations on all schools.

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[3] The maximal phi for splits of this sort ranges only from .20 to about .45 or .50, when the proportion in the other variable ranges from .50 to about .85.

As previously noted, the taxonomy analysis was carried out on unweighted data. Therefore, the results presented do not provide estimates of the national population of schools. On the other hand, an approximation of the national population may be obtained by multiplying the sum of the weights by the results for each taxonomy group and averaging over the groups. Using this method will achieve a closer approximation to the national population figures. Analyses are now in progress that will provide weighted results for each taxonomy group and for the national population. Included in this chapter are results obtained from answers to items 1-12, 27, and 29 of the Guidance Program Questionnaire.

Guidance Programs

Table 7-3 shows the results for each taxonomy group for the items on having a guidance program, the age of the program, and the number of full-time and part-time counselors reported in the Guidance Program Questionnaire. The percentage who said that they have someone officially assigned to guidance is shown. The results show that the South and West (Groups 51-54 and 61-64) are those reporting having guidance programs less frequently. Within these groups it may also be noted that the rural and small town schools have guidance programs in a smaller proportion of the cases than do the urban areas within the same regions. It is interesting to note that the unweighted data shows that 79% of the schools in the sample had guidance programs. This is a higher figure than obtained for the weighted data shown in Chapter 3 that showed that 73% of the schools had guidance programs.

The results on all remaining items are calculated as a percentage of the schools in the taxonomy groups that have a guidance program.

Age of the Program

The next several columns in Table 7-3 show the percentage of schools with guidance programs who had started their program in 1955 or earlier and the percentage who had started their program in 1950 or earlier. These figures show that the South and West have the largest proportions of schools who have recently organized their guidance programs, that is since 1955. Within each of these regions the small town and rural schools showed smaller proportions of guidance programs organized in 1955 or earlier than their urban counterparts. The percentage of guidance programs that were started in 1950 or earlier show results that are approximately parallel with those obtained for 1955 or earlier. The differences in these percentages may be used to judge the rate of growth of guidance in taxonomy group. A point worth noting in these results is the apparent interaction for these variables between region and urban versus non-urban location. For example, consistent through these two items is the result that the rank order from high to low percentages was as follows: large city schools (Groups 10, 21, 22, 31, and 32); Northeastern urban schools (Groups 41 and 42); Northeastern small town and rural schools (Groups 43 and 44); Western urban schools (Groups 61 and 62);

Table 7-3

Schools With Guidance Programs and Age of the Program (GP-1 and 4Y*)

Taxonomy Group	No. Schools in Tax. Group	Have a Guidance Program			Age of Program	
		%Yes	%No	N	%1955 or Earlier	%1950 or Earlier
10	32	100	32	32	96.9	87.5
21	27	100	27	26	100.0	96.2
22	53	100	53	53	96.3	90.6
31	6	100	6	6	66.7	66.7
32	21	95	20	20	95.0	95.0
41	4	100	4	4	100.0	50.0
42	47	100	47	47	76.6	55.3
43	31	90	28	28	71.4	32.1
44	21	95	20	20	65.0	50.0
51	24	71	17	17	53.0	11.8
52	44	84	37	37	51.3	27.0
53	40	48	19	18	27.9	16.7
54	98	56	55	54	26.1	5.6
61	12	83	10	10	70.0	50.0
62	82	95	77	78	65.4	41.0
63	135	72	97	92	46.8	17.4
64	131	66	86	83	38.5	12.0

Note. For exact wording of these questions, see Appendix.

*4Y was answered only by schools having guidance programs

Southern urban schools (Groups 51 and 52); Western small town and rural schools (Groups 63 and 64); and Southern small town and rural schools (Groups 53 and 54). This result shows the importance of exercising control over the regional and community variables.

Counselors and Ratio Estimates

Table 7-4 shows the reports from the Guidance Program Questionnaire on the number of full-time and part-time counselors and the total number of counselors reported for each taxonomy group. Also shown are ratio estimates of the number of counselors to schools with guidance programs and student-counselor ratios. A good deal of caution should be used in interpreting these data, particularly the ratio figures, since the data are unweighted. These data are shown in order to show the variability and rank order of the taxonomy groups, and not for accurate estimates of the national population or for each taxonomy group.

The number of full-time counselors, part-time counselors, and total for each group are shown in the first three columns. The next three columns show the ratio of counselors to schools with guidance programs. It may be noted for the full-time counselors that the ratios are lowest in the South, in the Northeastern small town and rural areas, in the rural portion of the West, and in the Western low quality housing urban areas. The ratios for part-time counselors are lowest in the Northeast, in the South, and in the rural and small town parts of the West. Combined ratios for both full-time and part-time counselors show variation in relative position. The rural and small town portions of the Northeast stand lowest on total number of counselors reported, followed by the South, the rural and small town West, and the low socio-economic urban group in the Northeast.

It should be kept in mind in reviewing these figures that there may be differences in interpretation as to who is a counselor. As noted in Chapter 3, it appears from comparing the results of the Counselor's Questionnaire and the Guidance Program Questionnaire that many schools are reporting as part-time counselors persons who spend less than 20% of their time in counseling and guidance; in all probability these people are members of the regular teaching staff. A taxonomy group analysis of the Counselor's Questionnaire should prove useful to show ratios for full-time counselor equivalents and for counselors with one or more graduate courses in practicum.

The ratio of students to counselors takes into account school size. The method for estimating the number of students was described in Chapter 3. These data show that the highest student-counselor ratios for full-time counselors are found in the South, the large cities (Groups 21 and 22), Northeast low quality housing urban areas (Group 41), and in the Western small town and rural schools. It is of interest to note that the ratio of students to full-time counselors for the Northeast small town and rural areas is most favorable, and in addition is the closest of those obtained to the recommended ratio of 300 students to one full-time counselor.

Table 7-4

Counselor Estimates and Ratios
(GP-2 & 3)

Taxonomy No.	Number of Counselors			Ratio: Counselors to Schools with GP			Ratio: Students to Counselors		
	Full-time	Part-time	Total	Full-time	Part-time	Total	Full-time	Part-time	Total
10	36	169	205	1.12	5.28	6.40	343.49	73.20	60.32
21	33	221	254	1.22	8.19	9.41	1255.45	188.00	163.10
22	85	414	499	1.60	7.81	9.41	1899.68	390.03	324.00
31	9	25	34	1.50	4.17	5.67	743.30	267.60	196.75
32	35	62	97	1.75	3.10	4.85	676.00	381.48	244.00
41	4	4	8	1.00	1.00	2.00	888.00	888.00	444.00
42	73	86	159	1.55	1.83	3.38	496.93	422.00	228.20
43	18	24	42	0.64	0.86	1.50	341.08	260.00	146.20
44	11	21	32	0.55	1.05	1.60	364.00	125.10	125.10
51	4	30	34	0.24	1.76	2.00	1112.00	130.80	130.80
52	25	61	86	0.68	1.65	2.32	826.21	240.20	240.20
53	3	48	51	0.16	2.53	2.69	1305.40	80.00	76.80
54	3	103	106	0.05	1.87	1.92	2561.40	70.79	70.80
61	9	21	30	0.90	2.10	3.00	407.45	122.23	122.24
62	93	179	272	1.21	2.32	3.53	670.99	229.42	229.42
63	14	165	179	0.14	1.70	1.84	1127.12	88.20	88.15
64	10	166	176	0.12	1.93	2.05	975.20	55.40	55.40

Note. For exact wording of the questions and their options see Appendix A.

The ratios of students to part-time counselors show a somewhat different picture with the more favorable ratios obtained in the rural areas of the Northeast, South, and West. The lack of correlation between full-time and part-time counselors shown here underscores the point that it is necessary to obtain data based on full-time counselor equivalents. As pointed out in Chapter 3, it is not only necessary to obtain information on the amount of time spent on counseling and guidance duties, it is also important to determine the extent to which students within each school are being reached. The latter point can only be determined from data obtained from the students through the Student Information Blank, in which questions were asked as to whether the student had seen a counselor during the previous year. Nonetheless, the data presented in Table 7-4 are of interest for providing a groundwork for further analyses in this important dimension of guidance programs.

Adequacy of Facilities

Table 7-5 shows the percentage of schools with guidance programs stating that various facilities were adequate or fully met current needs. The results of this analysis may be compared with the population estimates shown in Chapter 3, bearing in mind that these are unweighted data. Inspection of the table shows that the South tends generally to be low on each item. The Western rural schools also tend to rank low on most of the items.

Some interesting reversals are noted in this table when compared to the data on schools having a guidance program and age of the program. Although the largest cities (Groups 21 & 22) have had guidance programs for a long period of time, they rank lower on most of the items in Table 7-5 than do the intermediate size cities (Groups 31 & 32) and most of the Northeastern schools. Of particular note is the fact that the large city schools (Groups 21 & 22) rank low on the adequacy of the budget and on the adequacy of clerical assistance. It is interesting, too, that the large city schools rank relatively low on the availability of an adequate file of tests.

The correlations for these items shown in Table 7-2 may be partly accounted for by the correlation among group means shown in this table. This point is substantiated by the fact that the South tended to be consistently low, and the intermediate size cities and Northeastern region tended to be high on most of these items.

Referral Resources

Information was obtained on the availability and accessibility of psychiatrists, psychologists, social workers, guidance clinics, speech clinics, and reading clinics. (Population distributions for these items were shown in Chapter 3. Comparisons between these data and the data shown in Chapter 3 should bear in mind that the data shown here are unweighted while those in the previous chapter are weighted.) The results (Table 7-6) show the percentage of schools with guidance programs indicating that the given resource was available; the second percentage under each resource represents those to whom the resource was "accessible." Accessibility was defined in terms of those indicating that the resource was available, and that a long waiting period was not experienced in gaining access to the given resource. As noted in Chapter 3,

Table 7-5

Adequacy of Facilities

(GP-5)

Taxonomy Group	Private Room N'	Private Room %	Testing Space N'	Testing Space %	Tests N'	Tests %	Guidance Space N'	Guidance Space %	Budget N'	Budget %	File N'	File %	Clerical N'	Clerical %
10	32	56.3	32	50.0	32	81.3	32	50.0	30	53.4	32	90.7	32	34.4
21	27	59.2	26	57.7	27	77.7	27	66.7	26	42.3	27	92.5	27	22.2
22	53	49.0	52	53.8	52	71.1	52	55.8	52	42,3	53	88.7	53	20.8
31	5	100.0	6	83.3	5	80.0	6	83.3	5	66.7	6	100.0	6	42.9
32	19	84.2	19	47.4	19	94.4	19	78.9	19	77.8	20	84.2	20	63.1
41	4	75.0	4	50.0	4	100.0	4	75.0	4	100.0	4	100.0	4	25.0
42	47	83.0	45	55.6	46	89.1	47	70.2	47	78.8	47	91.5	47	42.5
43	28	64.3	28	42.9	28	82.1	28	57.1	27	88.9	28	78.6	26	38.4
44	20	80.0	20	75.0	20	100.0	20	80.0	20	90.0	20	90.0	20	45.0
51	18	44.5	18	38.9	18	44.5	17	41.1	18	16.7	18	55.5	18	16.7
52	37	62.1	37	45.9	36	72.2	36	52.8	35	40.0	36	77.8	35	11.5
53	18	61.1	18	44.5	18	61.2	18	38.9	18	27.8	18	72.2	17	17.7
54	52	46.2	53	50.9	54	55.6	51	50.9	50	22.0	54	75.9	49	10.2
61	10	100.0	10	60.0	10	90.0	10	80.0	10	70.0	10	100.0	9	22.2
62	78	75.7	76	55.3	77	87.1	75	70.6	77	74.1	77	85.8	77	40.3
63	95	60.0	95	73.7	95	74.8	95	64.3	95	60.0	96	81.2	94	35.1
64	83	48.2	84	64.3	85	62.4	81	46.9	82	48.8	82	65.8	82	33.0

% Adequate and Fully Meets Needs.
Note. For exact wording of the question and its options see Appendix A.

Table 7-6

Referral Resources
(GP-6)

Taxonomy No.	Psychiatrist		Psychologist		Soc. Worker		Child Guidance Clinic		Speech Clinic		Reading Clinic	
	%*	%**	%*	%**	%*	%**	%*	%**	%*	%**	%*	%**
10	100	47	97	50	97	79	97	59	97	91	88	66
21	96	52	96	59	85	56	92	37	92	85	96	67
22	102	60	106	62	94	70	102	40	104	94	100	88
31	88	88	106	100	106	100	106	100	88	89	88	88
32	100	85	100	100	95	85	90	80	90	85	85	75
41	75	25	100	50	100	75	100	75	75	50	75	50
42	81	45	90	73	83	66	74	38	68	51	64	43
43	68	26	82	49	74	53	68	22	68	40	60	32
44	85	40	95	75	85	55	70	40	95	45	65	15
51	90	42	70	22	118	86	62	28	48	28	56	28
52	56	29	59	41	84	57	64	29	56	40	38	28
53	38	0	48	16	54	38	54	12	42	10	38	06
54	53	9	53	17	78	68	49	17	64	26	49	13
61	70	40	70	50	80	70	60	30	80	50	60	50
62	78	43	88	44	88	65	76	38	81	65	62	45
63	60	14	67	23	74	46	58	10	67	23	60	17
64	64	13	68	16	72	49	58	15	60	23	56	16

*Per Cent Available
**Per Cent Accessible
Note. For exact wording of the question and its options see Appendix A.

psychologists and social workers tend to be more available than psychiatrists. The differences in accessibility are most marked outside of the largest cities (Groups 21, 22, 31, & 32). For the Northeastern, Southern, and Western areas of the country accessibility of psychiatrists is fairly low, with social workers and psychologists being relatively high. The small town and rural areas in the Northeastern, Southern, and Western regions appear to have less access to these resources than do the urban areas within these regions. The data for child guidance clinics, speech clinics, and reading clinics show somewhat similar patterns of relationships as for psychiatrists, psychologists, and social workers, with the South ranking lowest on both availability and accessibility. Within each region, the small town and rural areas are lower in terms of accessibility to these resources than are their urban counterparts in the same regions. Child guidance clinics are about equally available for the large cities, the vocational schools, and for the intermediate size cities (Groups 31 & 32); however, they are much less accessible in the large cities and vocational schools than in the intermediate size cities.

Duties and Functions Performed by Guidance Personnel

Problems Brought to Counselors

In response to the question, "How frequently do students bring each of these topics to the counselor for discussion or advice?", the per cent marking very frequently or frequently are presented in Table 7-7. These items sought to obtain responses regarding the initiation of questions by the students rather than by the counselors. The first three items deal with academic problems — dissatisfaction over low grades, students with high grades who want extra academic work, and course planning. The percentages for these three items show that course planning was a problem more frequently brought to counselors than was dissatisfaction over low grades or extra academic work being requested by students with high grades.

Although there is variation among the groups, there does not appear to be a consistent pattern that is clearly correlated with region, community size, or quality of housing. Dissatisfaction over low grades as a problem brought to counselors varies a great deal, and it appears that the South and West show consistently lower percentages than do the large cities, vocational schools, and the Northeastern region. It seemed likely that initiation of discussions on the part of the student with the counselor over low grades might be reflected in grading policies and practices, the percentage of students who have gone on to college (that is, reflecting the importance of grades to the student), and the average ability level of the students. However, the correlations with these items in the correlation matrix (Table 7-2) do not bear out this hypothesis. The correlations with test scores ranged from -.06 to -.12 and the correlation with the percentage of boys who have gone on to college was +.03.

Students with high grades desiring extra academic work do not appear to be a problem frequently brought to counselors. This result may be due partly to lack of motivation or initiative on the part of the students; however, it may also be a problem brought more frequently to teachers than to the counseling staff. The large city schools (Groups 21, 22, 31, & 32) appear to stand highest on this item, with percentages ranging from 16 to 34 per cent.

Table 7-7

Problems Brought to Counselors (GP-8)*

Taxonomy Group	Dissatis- faction Low Grades		High Grades Extra Acad. Work		Course Planning		Vocational Planning		Further Education		Financing Education		Dating		Person- ality Problems		Problems other Students		Financial Problems	
	N	%**	N	%**	N	%**	N	%**	N	%**	N	%**	N	%***	N	%**	N	%**	N	%**
10	32	34.4	32	6.2	32	75.0	32	84.4	32	59.4	32	28.0	32	40.6	32	25.0	32	43.8	32	68.8
21	27	51.8	27	25.9	27	88.9	27	92.5	27	100.0	27	18.5	27	33.3	27	40.7	27	25.9	27	85.0
22	53	50.9	53	34.0	53	98.1	53	92.5	53	98.1	53	43.4	53	26.4	53	39.6	53	32.1	53	69.8
31	6	33.3	6	16.7	6	83.3	6	83.4	6	83.3	6	50.0	6	33.4	6	33.4	6	33.4	6	83.3
32	20	70.0	20	20.0	20	95.0	20	95.0	20	100.0	20	70.0	19	52.6	20	35.0	20	30.0	20	65.0
41	4	75.0	4	25.0	4	75.0	4	50.0	4	75.0	4	75.0	4	25.0	4		4		4	50.0
42	46	43.5	46	6.5	46	97.8	46	95.6	46	100.0	46	76.1	46	50.0	46	32.6	46	17.4	46	45.6
43	27	40.7	28	3.6	28	85.7	28	82.2	28	89.3	28	60.7	28	46.4	26	26.9	28	10.7	28	96.0
44	20	45.0	20	0.0	20	80.0	20	85.0	20	95.0	20	65.0	20	45.0	20	20.0	20	25.0	20	30.0
51	18	38.9	17	11.8	18	72.2	18	55.5	18	77.8	18	66.6	18	44.4	18	38.9	18	33.3	18	66.7
52	37	37.8	37	5.4	37	91.9	37	83.7	37	97.3	37	73.0	37	48.6	37	29.7	37	24.3	37	40.5
53	19	26.3	19	5.3	19	84.2	19	79.0	19	89.4	19	52.6	19	42.1	19	26.4	19	26.3	19	57.9
54	53	39.6	53	11.4	55	69.1	55	72.8	55	80.0	55	43.7	53	49.0	53	20.8	55	30.9	54	38.9
61	10	10.0	10	10.0	10	100.0	10	100.0	10	100.0	10	80.0	10	30.0	10	50.0	10	20.0	10	60.0
62	78	30.7	77	15.6	78	93.6	78	89.8	78	100.0	77	65.0	78	56.5	78	38.5	78	27.0	78	48.7
63	95	24.2	95	11.6	96	90.6	96	84.4	96	86.4	93	40.9	94	35.0	94	12.8	95	17.9	95	24.2
64	85	27.0	85	15.3	85	77.6	86	75.6	86	79.0	86	40.7	86	30.3	85	22.1	85	24.7	85	20.0
	630		629		634		635		635		631		630		628		633		632	

*For Item, see Appendix
**Percent of Schools with Guidance Programs Responding "Very Frequently" or "Frequently"
***Percent of Schools with Guidance Programs Responding "Very Frequently," "Frequently," or "Occasionally"

The next three items in Table 7-7 are concerned with planning for after high school — vocational planning, plans for further education or training, and financing education after high school. The items on vocational planning and educational planning both show high percentages. Referring to Table 7-2, it may be noted that these two items correlate .70, that they are positively correlated with student test scores, and that they are correlated with the percentage of boys going to college, rural-urban location, and housing quality. In addition to these relationships, the percentages in Table 7-7 show correlation with region, the South appearing to be slightly lower than the rest of the country. The results on educational planning appear to be consistent with duties performed by counselors as reported in Chapter 3; however, those for vocational planning appear to be somewhat higher than obtained previously. The lowest percentages for vocational planning were found in the large city schools and small town and rural areas in the South and West (Groups 10, 21, 22, 53, 54, 63, & 64). Within the large cities the low quality housing areas were lower than the high quality housing areas. This difference may reflect a lower rate of college attendance among the low ability group.

The next four items deal with students' personal problems. In the first three — dating, personality problems, and problems with other students — it is difficult to discern any consistent relationships among the taxonomy groups, with the exception that problems with other students appear to be highest in the vocational schools (Group 10). On the other hand, the item concerning financial problems in school does show a number of interesting group differences. In general, the percentages are highest for the large city schools and the vocational schools (Groups 10, 21, 22, 31, & 32), with the low quality housing area groups showing higher percentages than the high quality housing groups.

Circumstances for Holding Conferences with Parents

Table 7-8 shows the percentage of schools in each group marking "routinely" for each of the items. There does not appear to be any great difference between the percentage responding "routinely" for each of these items. There does, however, appear to be some group differences associated with region and socio-economic level.

Purposes for Calling a Conference with Parents

Responses to the question, "... How often does the counselor call the students' parents for a conference?", are shown in Table 7-9 (GP-11). The percentages show those answering "always" or "frequently" to these items. The first two items — discipline and attendance — show the highest percentages in the largest cities and vocational schools (Groups 10, 21, & 22), followed closely by the remaining large cities (Groups 31 & 32). For both of these items the Northeastern region stands lowest. These differences may mirror differences in school philosophies. This same pattern of relationships appears to hold for medical problems, with the large cities and vocational schools showing higher percentages than the others, and the Northeastern region standing lower than the others. The percentages for calling parents about low grades show that, again, the large cities and vocational schools stand higher

Table 7-8

Circumstances for Holding Conferences with Parents (GP-10)

Item 10. Under what circumstances are conferences held with parents? (as indicated below)*

	Per Cent Routinely			
Tax. No.	Parent Request	Student Request	Teacher Request	Counselor Request
10	75	81	69	63
21	81	84	77	81
22	74	79	81	77
31	100	100	83	100
32	65	60	80	75
41	75	75	75	75
42	85	83	89	81
43	63	65	50	57
44	85	68	63	75
51	59	50	63	53
52	70	76	65	54
53	42	39	44	56
54	48	48	50	45
61	80	80	70	70
62	76	73	65	69
63	59	56	53	57
64	67	60	57	55

*For exact wording of question see Appendix

Table 7-9

Purposes for Calling Conference with Parents (GP-11)

GP-11. For each of the following, how often does the counselor call the student's parents for a conference? (As indicated below.)*

Tax. No.	Discipline	Low Grades	High Grades	Personality	Medical	Attendance	College Plans	Job Plans	Progress Reports
	%	%	%	%	%	%	%	%	%
10	56	72	6	66	59	75	31	28	7
21	67	63	4	56	67	81	30	8	8
22	70	89	19	68	49	76	60	26	10
31	50	67	17	33	17	50	50	33	17
32	60	80	15	40	60	60	60	20	6
41	0	25	0	25	25	25	0	0	0
42	13	51	8	23	17	26	57	26	4
43	11	39	11	25	14	18	46	21	0
44	5	47	10	5	16	37	38	26	6
51	38	44	6	22	35	67	44	17	0
52	25	46	11	30	30	50	27	19	0
53	16	53	5	5	42	42	32	5	6
54	19	30	19	9	32	46	30	15	13
61	10	40	11	30	50	50	60	40	10
62	23	49	9	33	38	46	40	23	6
63	20	36	11	17	32	39	33	20	8
64	26	29	4	19	21	36	21	12	12

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* For exact wording of this question see Appendix.

than the other taxonomy groups. There is some tendency in all groups for those of lower socio-economic schools to call parents about low grades less frequently than the higher socio-economic schools. For the South and West, the rural areas showed the lowest percentages. Calling parents about high grades appears to be done quite infrequently. Although there are variations among the percentages, they do not appear to be clearly related to variations in region, community size, or socio-economics. Referring to Table 7-9, it might be noted that concern over low grades receives much more attention than high grades.

Calling parents about personality problems shows the highest percentage in the largest city schools and vocational schools (Groups 10, 21, & 22), with the lowest percentages in the rural and small town areas within the regions. The items on college plans and job plans show results similar to those obtained for other items, with college plans receiving a greater degree of attention than job plans. Higher quality housing areas in the large cities and in the Northeast place greater attention on college plans than do the low socio-economic areas; however, this is reversed for the South and West.

Duties Performed by Counselors

Table 7-10 shows percentage responses for various duties and functions performed by the counselors (GP-12). This list of items was analyzed for national population figures shown in Chapter 3, Table 3-19. For these items some differences between taxonomy groups may be noted. However, the variations probably are not attributable to location or socio-economic factors; they may be more closely linked to student-counselor ratio or student characteristics. This possibility will be explored in later analyses.

Printed Materials for Guidance

Table 7-11 shows the schools' evaluations of the adequacy of various types of printed information for use in guidance programs (GP-27). The table shows the combined percentages of those who said that the materials were "fairly complete, up-to-date, and well-organized," and those who said that the materials were "very complete, up-to-date, and well-organized." In general, the lowest percentages were obtained for "printed matter about placement organizations," "printed matter about recreational and cultural opportunities in the community," "printed matter about occupational opportunities," and "catalogs for vocational or industrial schools." These results are consistent with those shown for other items in that occupational and vocational emphasis appears to be low compared to the emphasis placed on college attendance or on educational problems in the school setting. Consistent with the results obtained on many of the other items, the South and rural areas appear to be lower than the other groups for many of the items.

Guidance-Related Courses

Table 7-12 shows the percentage of schools in each taxonomy group offering various guidance-related courses (GP-29). For this item the schools

Table 7-10

Duties Performed by Counselors (GP-12)

The data in this table were taken from responses to Item 12 of the Guidance Program Questionnaire. The complete item read as follows:

12. For each of the following activities, mark your answers as follows:

1. The counselor performs it regularly, as a major responsibility
2. The counselor performs it occasionally, but not regularly
3. The counselor never perform it

a. _____ Counseling with students not getting along with classmates
b. _____ Helping students make the most of their potentialities
c. _____ Assisting students in making valid self-appraisal
d. _____ Administering testing program
e. _____ Teaching
f. _____ Counseling with handicapped
g. _____ Research
h. _____ Non-counseling administrative duties
i. _____ Clerical work
j. _____ Helping individual students plan their high school programs
k. _____ Counseling individual students on college entrance requirements, choice of college, etc.
l. _____ Counseling with individual students on subject-matter difficulties
m. _____ Counseling with individual students achieving below the acceptable scholastic level
n. _____ Counseling with individual students regarding plans for financing college education
o. _____ Counseling individual students on jobs and occupations
p. _____ Helping students find part-time jobs
q. _____ Helping graduates find jobs
r. _____ Counseling with individual students on personal or family problems
s. _____ Identifying seriously disturbed students having severe emotional problems, and referring them elsewhere for help
t. _____ Counseling with disturbed students having emotional problems
u. _____ Counseling with students over minimum age who wish to drop out of school
v. _____ Counseling with students under minimum age who wish to drop out of school
w. _____ Conducting group orientation sessions for new students
x. _____ Conducting group discussions on jobs and occupations
y. _____ Conducting group discussions on colleges and other training after high school
z. _____ Conducting group discussions on adjustment of personality
aa. _____ Conducting group discussions on military obligations
bb. _____ Follow-up work with individuals to determine the results of counseling
cc. _____ Counseling with gifted students
dd. _____ Counseling with students having problems with teachers
ee. _____ Other (specify)______________________________
_____ ____

Table 7-10

Duties Performed by Counselors (GP-12)*

Tax. No.	General Aims				Non-Guidance Duties						Non-Counseling Duties				Counseling Follow-up		Pre-College					
	12b		12c		12e		12h		12i		12d		12g		12bb		12k		12y		12n	
	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3
10	81	00	67	03	47	19	52	06	53	06	72	03	09	16	50		75	00	22	09	39	00
21	85	00	52	00	63	26	37	15	67	00	37	18	11	44	30	11	85	00	48	22	33	11
22	81	00	66	00	64	25	36	14	76	00	48	15	12	20	35	12	88	00	52	08	42	02
31	100	00	100	00	50	50	00	67	33	00	83	00	33	17	17	33	100	00	67	33	67	00
32	95	00	80	00	39	50	21	21	30	10	80	00	16	05	26	10	95	00	50	00	65	00
41	75	00	25	25	25	75	50	25	50	00	100	00	25	25	75	00	100	00	50	25	100	00
42	87	00	74	02	23	53	30	17	35	02	89	00	22	09	45	06	98	00	53	13	77	00
43	71	00	63	00	26	37	29	25	46	00	86	00	29	18	36	14	93	00	43	07	57	00
44	90	00	70	00	45	40	40	15	55	15	85	00	15	10	26	11	100	00	35	15	70	00
51	65	00	50	06	67	06	22	28	33	17	67	11	22	33	22	17	78	00	33	11	72	06
52	76	00	53	03	56	44	39	22	32	19	81	03	16	19	33	11	86	00	40	11	51	00
53	53	00	50	06	70	10	47	32	37	21	79	05	20	25	26	16	90	00	47	10	63	00
54	60	00	41	04	79	13	35	31	29	25	64	04	24	22	24	20	80	00	34	17	52	06
61	90	00	80	00	44	44	40	10	40	00	100	00	30	00	20	30	100	00	60	30	80	00
62	76	00	74	01	33	44	25	26	31	10	81	01	15	13	31	27	96	00	42	10	60	00
63	65	00	48	02	63	16	37	21	40	12	82	04	15	20	22	19	85	01	38	10	50	03
64	62	00	45	04	81	07	54	21	46	04	86	00	18	32	31	11	79	00	36	15	40	01

Note.--The table shows the per cent responding "regularly" and the per cent responding "never" for each item; the per cent responding "occasionally" is not shown but may be obtained by subtraction of the per cents given from 100.

*The complete item is given on the preceding page. "1" = regularly, "3" = never.

Table 7-10 (continued)

Duties Performed by Counselors (GP-12)*

Tax. No.	Education--In School								Drop-outs				Vocations				Placement				Military	
	12w		12j		121		12m		12u		12v		12o		12x		12p		12q		12aa	
	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3
10	75	03	77	00	88	00	84	00	69	00	75	00	53	00	38	12	56	09	59	06	23	29
21	56	15	89	00	67	00	78	04	78	00	74	04	46	04	22	33	36	20	36	24	23	50
22	58	04	92	00	81	00	91	00	74	00	79	00	48	00	27	27	39	15	33	25	18	38
31	67	17	100	00	83	00	100	00	83	00	83	00	83	00	50	33	50	00	17	00	33	50
32	65	10	95	00	85	05	90	00	60	05	60	10	65	00	25	15	33	17	10	26	25	15
41	50	50	75	00	75	00	75	00	75	00			75	00	25	25	50	00	25	25	25	50
42	55	21	98	00	79	00	79	00	55	06	64	04	83	04	36	17	36	02	30	06	45	28
43	43	21	89	00	64	00	68	00	61	04	71	04	57	00	33	15	11	11	11	21	26	22
44	45	30	90	00	65	00	75	00	60	15	50	10	65	05	30	10	05	15	10	15	26	32
51	44	22	56	00	39	00	44	00	61	06	61	06	56	00	33	17	28	11	12	12	24	29
52	44	32	76	03	51	00	51	00	49	05	46	08	49	03	26	23	16	16	16	19	14	31
53	21	42	90	00	63	00	63	00	47	05	42	16	58	05	37	21	11	21	10	26	11	26
54	28	30	70	04	47	02	50	02	41	08	40	13	46	04	19	24	06	33	13	32	19	36
61	50	40	100	00	90	00	90	00	50	00	50	10	70	00	50	30	10	10	20	30	20	30
62	54	13	95	01	81	00	77	00	55	01	56	05	68	00	36	22	17	12	05	32	24	32
63	52	18	80	01	54	01	63	01	40	06	47	07	57	02	28	21	05	22	06	33	22	31
64	40	27	77	01	51	00	64	00	34	06	35	15	41	05	27	22	06	28	05	40	24	20

Note.--The table shows the per cent responding "regularly" and the per cent responding "never" for each item; the per cent responding "occasionally" is not shown but may be obtained by subtraction of the per cents given from 100.

*The complete item is given on the page preceding this table. "1" = regularly, "3" = never.

Table 7-10 (continued)

Duties Performed by Counselors (GP-12)*

Tax. No.	Emotional Problems				Adjustment								Counseling Handicapped		Counseling Gifted	
	12s		12t		12z		12a		12dd		12r		12f		12cc	
	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3
10	69	03	69	03	16	19	59	00	72	03	53	00	31	00	53	06
21	70	00	56	00	15	52	44	00	74	00	30	00	30	04	70	00
22	87	02	69	06	15	52	30	02	77	00	43	04	53	04	81	02
31	83	00	67	00	17	33	67	00	83	00	50	00	50	00	67	00
32	65	00	65	00	20	25	40	00	85	00	60	00	45	00	65	00
41	75	00	75	00		25	75	00	75	00	25	00	50	00	75	00
42	65	02	44	08	13	47	36	02	74	02	40	00	33	13	64	02
43	57	07	29	07	25	39	32	07	54	04	36	04	29	11	33	04
44	60	00	35	10	16	32	40	00	60	00	20	00	42	11	53	00
51	22	11	39	06	33	17	28	06	56	00	22	00	22	44	50	06
52	51	08	49	00	17	31	43	05	43	00	38	03	27	00	47	03
53	21	10	32	05	21	21	26	00	53	05	16	00	21	16	42	05
54	24	21	30	02	19	29	42	04	36	08	28	06	29	15	39	06
61	60	00	40	00	30	40	30	00	70	00	40	10	10	00	90	00
62	56	06	47	05	13	37	42	03	65	03	46	01	31	17	59	06
63	42	06	33	09	18	42	29	03	59	01	28	04	19	20	35	06
64	28	13	28	09	13	30	34	02	55	02	22	07	13	19	48	05

Note.--The table shows the per cent responding "regularly" and the per cent responding "never" for each item; the per cent responding "occasionally" is not shown but may be obtained by subtraction of the per cents given from 100.

*The complete item is given on the page preceding this table. "1" = regularly, "3" = never

Table 7-11

Printed Materials for Guidance

27. Does your school have available the following materials for the students' use? Mark your answers as follows:

1. No
2. Yes, but minimal or inadequate
3. Yes, fairly complete, up-to-date, and well organized
4. Yes, very complete, up-to-date, and well organized

Tax. Group	Percentage responding 3 and 4 a	b	c	d	e	f	g	h
10	81	68	84	78	90	90	48	81
21	100	89	79	93	85	81	37	66
22	98	98	81	96	87	77	59	75
31	100	67	83	83	89	83	67	83
32	91	91	76	95	86	91	52	52
41	100	100	75	100	100	100	25	75
42	100	96	77	98	94	94	23	53
43	90	87	71	81	97	81	27	37
44	95	90	57	81	95	86	19	33
51	83	83	54	79	88	54	22	25
52	95	86	70	88	93	79	17	25
53	85	70	51	70	80	69	28	33
54	80	61	52	67	72	57	23	20
61	82	83	64	75	82	58	27	46
62	99	95	72	96	90	91	35	39
63	93	81	49	76	86	69	14	14
64	84	60	40	80	75	56	15	19

a. Catalogs of colleges within commuting distance
b. Catalogs of colleges beyond commuting distance
c. Catalogs for vocational or industrial schools
d. Printed matter about scholarships, loan plans, etc.
e. Printed matter about military service
f. Printed matter about occupational opportunities
g. Printed matter about recreational and cultural opportunities in the community
h. Printed matter about placement organizations (e.g., USES)

Table 7-12

Course Offerings in Guidance — Related Areas

GP-29. Which of the following topics are offered as a full course or part of a course at your school? (As indicated below.)*

Tax. No.	Occupational Information		How to Study		Life Adjustment		Mental Health		Self-Appraisal		Personality Development		Family Living	
	%**	%***	%**	%***	%**	%***	%**	%***	%**	%***	%**	%***	%**	%***
10	3	74	11	75	33	44	11	64	20	68	7	76	22	63
21	29	67	24	76	61	30	24	67	41	54	35	61	24	56
22	32	66	29	69	56	44	31	65	49	47	40	58	31	49
31	0	75	25	50	0	80	0	100	25	50	25	50	0	60
32	33	43	42	47	53	21	45	35	39	39	40	30	30	30
41	0	100	33	67	0	100	0	100	0	100	0	100	0	100
42	33	54	25	70	43	55	29	48	44	51	37	61	18	41
43	24	59	43	50	46	39	39	46	54	34	48	48	27	43
44	19	76	19	81	29	62	32	58	35	60	35	65	14	67
51	40	35	50	39	53	42	55	35	61	33	40	40	21	46
52	33	58	42	50	44	50	27	54	48	45	33	56	20	62
53	40	51	39	61	43	54	34	54	56	44	39	56	24	55
54	53	40	42	54	52	42	34	51	62	38	46	46	24	53
61	33	58	36	64	54	36	40	50	46	55	36	64	9	73
62	23	67	30	70	30	58	16	72	28	71	19	74	8	55
63	36	60	39	58	42	50	34	52	49	48	40	56	24	67
64	37	56	46	52	51	43	43	45	53	42	38	54	22	58

* For exact wording of this question see Appendix.

** Per cent of schools not offering the material.

*** Per cent of schools offering the material as part of a course.

were asked to indicate whether the course was offered, and if offered, whether it was given as a full course or part of a course. It was not considered necessary that the course titles be identical; the instructions were to "... mark even if the title differs somewhat, if you feel the content is the same." The results shown are in terms of the percentage indicating that the course was not offered and in terms of the percentage indicating that the material is offered as part of the course.

The option on occupational information shows some interesting variation, with the percentages responding that the course is not offered being highest for the South. Course work on how to study shows relatively small variation between taxonomy groups for the percentage indicating that the course was not offered; however, the lowest groups appear to be the vocational schools and the large city schools (Groups 10, 21, and 22). It appears that when the course is offered, it is offered largely as part of a course rather than as a full course.

Options of this question are concerned with what might be called personal or developmental courses. The percentages of schools that do not offer life adjustment courses vary by taxonomy groups but the variation does not appear to be consistently related to location or socio-economic factors. It appears, too, that those offering this subject matter do so as part of a course rather than as a full course. For mental health courses, the large city schools (Groups 21 and 22) appear to offer the material as part of a course in the greatest proportion. For this item it is also interesting to note that two of the highest percentages are the low socio-economic urban areas in the South and West (Groups 51 and 61). The percentages offering self-appraisal courses do not appear to show a consistent pattern of relationship with the taxonomy groups; nor do the percentage offering courses in personality development or family living show patterns which could be attributed to differences in location or socio-economic factors.

It should be noted from Table 7-2 that there is a moderate level of correlation in offering versus not offering these courses, ranging from r = .50 to .52. Thus, it appears likely that offering courses in guidance-related topics is largely a function of interrelated program efforts; that is to say, it appears that offering material in several of these areas is covered by a single course in many instances, and that it is a result of administrative interest. These administrative efforts in turn are correlated with having a guidance program, the age of the program, and the adequacy of the budget (Table 7-2). The fact that the correlations are not particularly high, and that the relationships with the taxonomy groups are also not high, points toward unique functions served by these courses. This in turn suggests the possibility that these items may contribute significant unique variance if used as predictor variables for guidance criteria.

Summary

1. This chapter dealt with preliminary analyses of the Guidance Program Questionnaire. The geographic locations of schools with Guidance Programs was explored, as was the relationship of guidance programs to the abilities of the students. Preliminary data were also obtained on many items in the Guidance Program Questionnaire not previously presented. The data are considered preliminary inasmuch as a large part of the data are unweighted.

2. The questions explored in this chapter included the following: What are the characteristics of the communities served by the guidance program? What are the tested abilities of students served by guidance programs? What are the relationships between guidance program functions?

3. Guidance Programs and Communities. In the large cities and Northeast region at least 90% of the schools had guidance programs. In the West and Southeast regions the percentages ranged from 48% to 95% of the schools having guidance programs. Within these regions fewer rural and small-town schools compared with urban schools had guidance programs. The South, West, and rural and small-town schools had organized their guidance programs more recently than had the large city schools and the Northeastern region.

4. The guidance resources such as clerical assistance and the guidance budget are associated with the location of the schools. For example, large proportions of the large city schools indicated that the budget for guidance was less than adequate.

5. In addition to the above, community relationships were explored on a preliminary basis with student-counselor ratios, professional resources for referral (psychologist, psychiatrist, child guidance clinic, etc.) and the various duties performed by the guidance staff, printed material available for guidance and course offerings in guidance-related areas. In general, the results are consistent with the findings in Chapter 3 that guidance people have emphasized academic problems and college attendance. Vocational problems have not been given as much attention.

6. The students in the schools that have a guidance program tend to have higher than average test scores.

7. Plans for further research include obtaining student-counselor ratios for each school and the exploration of guidance program functioning.

References

Guilford, J. P., Fundamental statistics in psychology and education. (2nd ed.) New York: McGraw-Hill, 1950.

Chapter 8

THE USES OF TESTS IN PUBLIC SENIOR HIGH SCHOOLS

This chapter is concerned with the types of tests used by public senior high schools and the purposes for which these tests are used. Information was obtained about the types of tests, such as individual intelligence tests, multiple aptitude batteries, standardized achievement tests, personality inventories, interest inventories, and others. Also obtained was information on the purposes for which test data are used. Test results may be used for a variety of purposes including administrative and guidance purposes. Administrative uses include establishing homogeneous classes and evaluating curricula. For guidance and counseling, test results may provide an objective basis upon which students' problems are identified; in addition, students may receive counsel or advice in regard to their work in school, occupational potential, and educational potential.

The data for this chapter were obtained from items 20 through 26 of the Guidance Program Questionnaire. All schools were asked to respond to these items, irrespective of whether or not they had a guidance program. (Chapter 3 describes the method and procedures for the Guidance Program Questionnaire. The rate of return and completion are also described.)

Taxonomy group analyses were conducted on each of the items using unweighted data. It should be kept in mind that since the data are unweighted, they are not approximations of the national population figures; however, they may be considered preliminary estimates. In later analyses the groups will be recombined in order to achieve a balance between the size of the subsample for each taxonomy group; to control for the major group differences that appear through this preliminary analysis; and to provide weighted data that will produce population estimates for each taxonomy group and for the population as a whole.

In addition to showing distributional data by taxonomy groups, a number of relationships are explored between these variables and characteristics of the school, community, students, and guidance program.

Findings

The Use of Standardized Tests

Schools using standardized tests in 1960.

Table 8-1 shows the response to the question: "Are standardized tests or inventories used in your school?" The only school groups with less than 95 per cent use of tests were the Southeastern rural schools (Taxonomy Group 54) with 90 per cent, the Southeastern low-quality housing urban schools (Taxonomy Group 51) with 92 per cent, and the Western low-quality housing urban schools (Taxonomy Group 61) with 92 per cent. One hundred per cent of the large and intermediate size city schools and the Northeastern area schools, including the rural schools, used standardized tests and inventories, with the exception of the largest city urban low-quality housing schools, (96 per cent).

Trends in the use of standardized tests [1]

Of those schools who answered that they had guidance programs in their school, over 90 per cent said (Item 14 of the Guidance Program Questionnaire) that their counseling, guidance, and testing services had been increased in recent years. Table 8-2 shows the responses of the schools having guidance programs. The majority of these schools, especially outside of the large cities, indicated that services had been increased in the past two years (that is, two years before the Spring of 1960). A similar situation was found in regard to the use of tests. Nationally, over 90 per cent of the schools with guidance programs indicated that they were making greater use of standardized tests. It was reported by most schools that they had increased their participation in state, national,and regional testing programs, had increased the tendency to keep detailed records of students' progress, and were making more effective use of test results. However, this was not true for cumulative records (Item 15); a much smaller proportion of the schools indicated that they had started to keep cumulative records.

A large majority of the schools in all regions indicated that they plan to expand counseling, guidance and testing services in the near future (Table 8-3). They also indicated that they plan to increase their use of standardized tests (see Table 3-11). Of the number saying that they do not plan to increase their testing, perhaps most are doing a great deal of testing now and do not need to increase their use of standardized tests. Nearly all schools also thought that they were making more effective use of tests than they were two years earlier. These data show little or no visible reaction against the use of standardized tests.

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[1] These data are presented in Chapter 3. See Tables 3-4, 3-8, 3-11, and 3-18.

Table 8-1

Use of Standardized Tests

GP-20. Are standardized tests or inventories used in your school?

Taxonomy Group	Total Schools in Tax. Group	Responding: Yes		Responding: No	Omit
		%	N		
10	32	100	0	0	1
21	27	96	26	1	0
22	53	100	53	0	0
31	6	100	6	0	0
32	21	100	21	0	0
41	4	100	4	0	0
42	47	100	47	0	0
43	31	100	31	0	0
44	21	100	21	0	0
51	24	92	22	2	0
52	44	98	42	1	1
53	40	98	39	1	0
54	98	90	87	10	1
61	12	92	11	1	0
62	81	99	80	1	0
63	135	98	131	3	1
64	131	98	126	3	2
Total	807	*97%	778	23	6

*% of those responding.

Table 8-2

Increase of Counseling, Guidance, and Testing Services

GP-14. Have counseling, guidance, or testing services in your school been increased in recent years?

1. No
2. Yes, in the past two years
3. Yes, since about 3 or 4 years ago
4. Yes, since about 5 or 6 years ago
5. Yes, since about 7 to 10 years ago

Taxonomy Group	Total Schools in Tax. Group	Responding: Yes* %	Responding: Yes* N	Responding: No	No Guidance Program
10	32	91	29	3	0
21	27	96	26	1	0
22	53	96	51	2	0
31	6	100	6	0	0
32	21	100	20	0	1
41	4	100	4	0	0
42	47	96	45	2	0
43	31	96	27	1	3
44	21	100	19	0	2
51	24	94	16	1	7
52	44	97	36	1	7
53	40	100	18	0	22
54	98	89	49	6	43
61	12	100	2	0	2
62	81	95	73	4	4
63	135	94	90	6	39
64	131	94	81	5	45
Total	807	95%**	600	32	175

*Answers to options 2, 3, 4, and 5 combined

** Per cent of those schools having guidance programs

Table 8-3

Expansion of counseling, guidance, and testing services planned

GP-16. Is your school planning to expand counseling, guidance, or testing services within the near future?

1. No
2. Yes, and will probably get under way within a year
3. Yes, but will probably not get under way for one or two years
4. Yes, but will probably not get under way for three or four years
5. Yes, but will probably not get under way for at least five years

Taxonomy Group	Total Schools in Tax. Group	Responding: Yes* %	Yes* N	No N	Omit
10	32	41	12	17	3
21	27	54	14	12	1
22	53	54	28	24	1
31	6	43	2	4	0
32	21	78	15	4	2
41	4	100	4	0	0
42	47	85	40	7	0
43	31	79	22	6	3
44	21	85	17	3	1
51	24	78	14	4	6
52	44	89	33	4	7
53	40	74	14	5	21
54	98	73	40	15	43
61	12	80	8	2	2
62	81	82	64	14	3
63	135	75	70	23	42
64	131	66	56	29	46
Total	807	72%**	453	173	181

*Answers to options 2, 3, 4, and 5 combined

** Per cent of those responding

The Types of Tests Used

Detailed information was obtained on the types of tests used by the schools. The questions were written to elicit information on broad categories of test types, rather than specific tests. The questions were written to elicit information regarding whether the tests were administered to all students, to groups of students, or to individual students as needed. The results of these analyses are shown in Tables 8-4 through 8-7.

Tests given to all students

Table 8-4 shows the results for tests which are given to all students in selected grades. This table shows the percentage of those schools administering each test in one or more grades (9-12). (The results shown are based on all public senior high schools rather than the 96 per cent of the schools who stated that they used nationally standardized tests.)

From Table 8-4 it appears that the tests used most frequently (i.e., by more than 50 per cent) were standardized achievement tests, tests for scholarship competitions, paper-and-pencil intelligence tests, multiple aptitude batteries, and interest inventories. However, the results vary considerably by taxonomy group. The data show systematic variation by region, socio-economic level,and type of community for the number and kinds of tests used. The vocational schools (Group 10), Cities A schools (Groups 21 and 22),and Southeastern schools (Groups 51-54) appear to be low on most of the items. In Cities B (Groups 31 and 32) the schools stand higher than average for use of individual intelligence tests, paper-and-pencil intelligence tests, and standardized achievement tests. Cities B schools also tend to be higher than average on the use of interest inventories and on the use of personality inventories. The Northeastern schools (Groups 41-44) have a greater than average proportion of schools using paper-and-pencil intelligence tests, multiple aptitude batteries, and interest inventories. However, with the exception of schools in low-cost housing areas in Group 41, smaller proportions report using individual intelligence tests. The Western schools (Groups 61-64) use multiple aptitude batteries, interest inventories, and personality inventories in greater proportion than the average. There are, however, some exceptions to this general tendency in some of the sub-groups in the Western schools.

It is recognized by many users that the measures of ability obtained from each of the five intellective test types may be used alternatively; thus, a test for scholarship competition such as the National Merit Scholarship tests which are generally administered to 11th and 12th graders might be expected to supplant multiple aptitude test batteries. It is, however, premature to speculate in detail about the meaning of this table until relationships are explored of this with other tests and the purposes for which the tests are used. In research to be conducted at a later time, efforts will be made toward developing several indices of the extent of use of tests.

Tests administered to groups of students

Table 8-5 shows the percentage of schools who administer each

Table 8-4

Percentage of Schools Giving Various Tests to all Students

GP-21. In what grades does your school give each of the following types of tests to all students?

a. Individual intelligence test
b. Paper-and-pencil intelligence test
c. Multiple aptitude batteries
d. Standardized achievement tests
e. Interest inventories
f. Personality or adjustment inventories
g. Locally devised system-wide tests or inventories (may include above types)
h. Special aptitude tests - art, music, language, etc.
i. Tests for scholarship competitions
j. Other

Taxonomy Group	No. Schools in Tax. Group	Per Cent (all Schools) checking one or more grades (9-12)									
		a	b	c	d	e	f	g	h	i	j
10	32	19	47	16	75	25	6	25	19	44	22
21	27	11	70	52	67	18	4	26	7	63	0
22	53	13	57	47	76	26	13	15	17	72	15
31	6	50	83	67	83	100	50	0	17	83	33
32	21	38	67	52	95	67	29	14	33	71	19
41	4	50	75	50	75	75	25	0	0	75	0
42	47	17	89	68	77	83	19	13	26	64	13
43	31	13	87	68	77	71	29	13	13	77	16
44	21	14	95	76	90	90	43	5	43	86	10
51	24	38	46	54	83	46	17	4	8	63	13
52	44	27	70	50	79	57	27	16	23	75	9
53	40	40	37	55	80	55	12	7	22	75	15
54	98	47	37	55	79	39	13	9	20	62	6
61	12	25	92	83	75	42	25	0	8	75	33
62	81	31	71	63	90	80	36	15	25	80	12
63	135	30	58	66	75	69	29	10	29	78	9
64	131	40	55	56	81	61	30	10	17	73	5

Table 8-5

Percentage of Schools Giving Various Tests to Groups of Students

GP-23. Which of the following kinds of tests are administered to groups of high school students (but not to all students) under special circumstances?

- a. Paper-and-pencil intelligence test
- b. Multiple aptitude batteries
- c. Standardized achievement tests
- d. Interest inventories
- e. Personality or adjustment inventories
- f. Locally devised system-wide tests or inventories
- g. Special aptitude tests - art, music, language, etc.
- h. Tests associated with contests
- i. Employment test batteries
- j. Tests for scholarship competitions
- k. Tests for college entrance

Taxonomy Group	No. Schools Testing	Per Cent of Schools Testing										
		a	b	c	d	e	f	g	h	i	j	k
10	32	63	16	69	34	9	41	34	31	28	63	59
21	26	81	69	81	35	19	31	23	46	69	96	65
22	53	77	55	75	55	34	32	30	70	42	98	96
31	5	100	80	80	80	100	40	60	60	80	100	60
32	21	71	71	71	86	62	19	57	71	52	90	81
41	4	100	50	75	75	100	25	25	75	50	100	75
42	47	60	49	55	60	38	11	51	85	79	94	85
43	31	61	55	58	61	52	13	45	74	74	94	77
44	21	67	57	67	76	38	14	48	86	76	90	76
51	22	45	36	59	50	27	18	18	59	45	95	73
52	42	52	52	67	64	26	14	29	71	62	90	79
53	39	44	51	74	54	18	5	10	49	44	82	62
54	87	32	39	63	48	18	15	17	43	45	67	62
61	11	73	55	55	73	73	--	55	64	55	82	82
62	80	75	59	69	75	49	14	54	71	53	98	81
63	131	49	47	53	61	46	10	36	52	42	88	69
64	126	39	37	54	53	26	10	29	46	28	79	62

type of test listed to groups of high school students, but not to all students. Presumably, the previous item would elicit information concerning administrative policy to administer tests to all students in given grades on a programmatic basis. However, this item was expected to elicit information about tests which might be most applicable for certain groups of students such as those aspiring for scholarships or those expecting to enter college.

Of particular note in Table 8-5 are the results for the vocational schools (Group 10). These schools appear to stand much lower on the use of multiple aptitude batteries, interest inventories, personality inventories, tests associated with contests, employment test batteries, tests for scholarship competition, and tests for college entrance. Although their use of tests for scholarship competitions and for college entrance are consistent with the percentage of these students that attend college, it would appear that multiple aptitude batteries and employment test batteries would be appropriate to the needs of the students in these schools.

The large city low-quality housing schools (Group 21) appear to stand low on the use of interest inventories and personality inventories but are generally average or better for the use of intellectual tests. Though the South appears to be lower than the average on a number of tests, they appear to use tests for scholarship competitions in about the same proportion as the Western schools and just a bit lower for the remaining schools.

Tests administered to individual students

Table 8-6 shows the percentage for each taxonomy group of tests administered to individuals. Several points of interest in this table are as follows: the individually administered intelligence test shows high proportions compared to the results shown in Table 8-4 for administration of individual intelligence tests to all students. The South stands lower than the average for the use of these tests. The vocational schools and the South again stand low in the use of projective personality tests and on the use of personality inventories. The South also tends to stand low on the use of reading tests.

Standardized achievement tests

Table 8-7 shows the percentage of schools using the various types of standardized achievement tests. It should be noted that some of the items (English, Mathematics, and Reading) show the percentage responding "regularly on schedule" and the remainder show the percentage responding "regularly on schedule or frequently". In general, the percentage for each of the items ranges from about 30% to about 65%. However, there does not appear to be a systematic variation by taxonomy groups for these items.

Comparison of use of interest inventories and personality measures

Figure 8-1 shows a graphic portrayal of the use of interest and

Table 8-6

Percentage of Schools Giving Various Tests to Individuals

GP-24. Which of the following kinds of tests are administered to the individual students (but not to all students)?

- a. Individual intelligence test
- b. Projective personality test
- c. Personality or adjustment inventories
- d. Reading tests
- e. Speech tests
- f. Special aptitude tests - art, music, language, etc.

Taxonomy Group	No. Schools Testing	Per Cent of Schools Testing					
		a	b	c	d	e	f
10	32	84	9	16	66	56	34
21	26	73	42	54	81	85	42
22	53	70	32	53	81	70	36
31	5	80	40	60	100	20	60
32	21	57	38	76	76	43	43
41	4	75	50	75	100	50	25
42	47	91	38	49	64	30	36
43	31	90	32	35	55	29	35
44	21	86	24	43	62	48	29
51	22	59	9	9	36	14	41
52	42	62	10	26	43	19	23
53	39	49	8	13	26	13	23
54	87	45	8	13	22	15	16
61	11	64	45	45	64	27	18
62	80	76	29	56	61	43	48
63	131	69	15	37	35	17	26
64	126	56	14	21	37	14	25

Table 8-7

Percentage of Schools Giving Various Standardized and Achievement Tests

GP-22. In what high school subjects are standardized achievement tests given?

a. English
b. Math
c. Physical Sciences
d. Social Sciences
e. Foreign Languages
f. Reading
g. Spelling

Taxonomy Group	No. Schools Testing	Per Cent of Schools Testing						
		a*	b*	c**	d**	e**	f*	g**
10	32	41	44	44	44	44	50	44
21	26	58	58	65	62	65	23	58
22	53	43	42	47	42	55	38	47
31	5	40	60	20	40	20	40	40
32	21	48	43	48	43	48	33	52
41	4	50	25	25	50	25	50	50
42	47	43	47	40	47	36	45	47
43	31	45	48	42	48	42	52	52
44	21	29	29	38	43	52	43	48
51	22	45	45	45	36	41	50	50
52	42	45	52	36	38	31	48	40
53	39	54	59	41	49	58	49	54
54	87	59	59	45	44	44	48	39
61	11	55	45	45	55	36	45	55
62	80	39	43	41	46	59	45	41
63	131	56	56	45	47	60	59	52
64	126	56	56	41	47	53	48	44

* Percentage answering "Regularly, on schedule".
** Percentage answering "Regularly, on Schedule" or "Frequently".

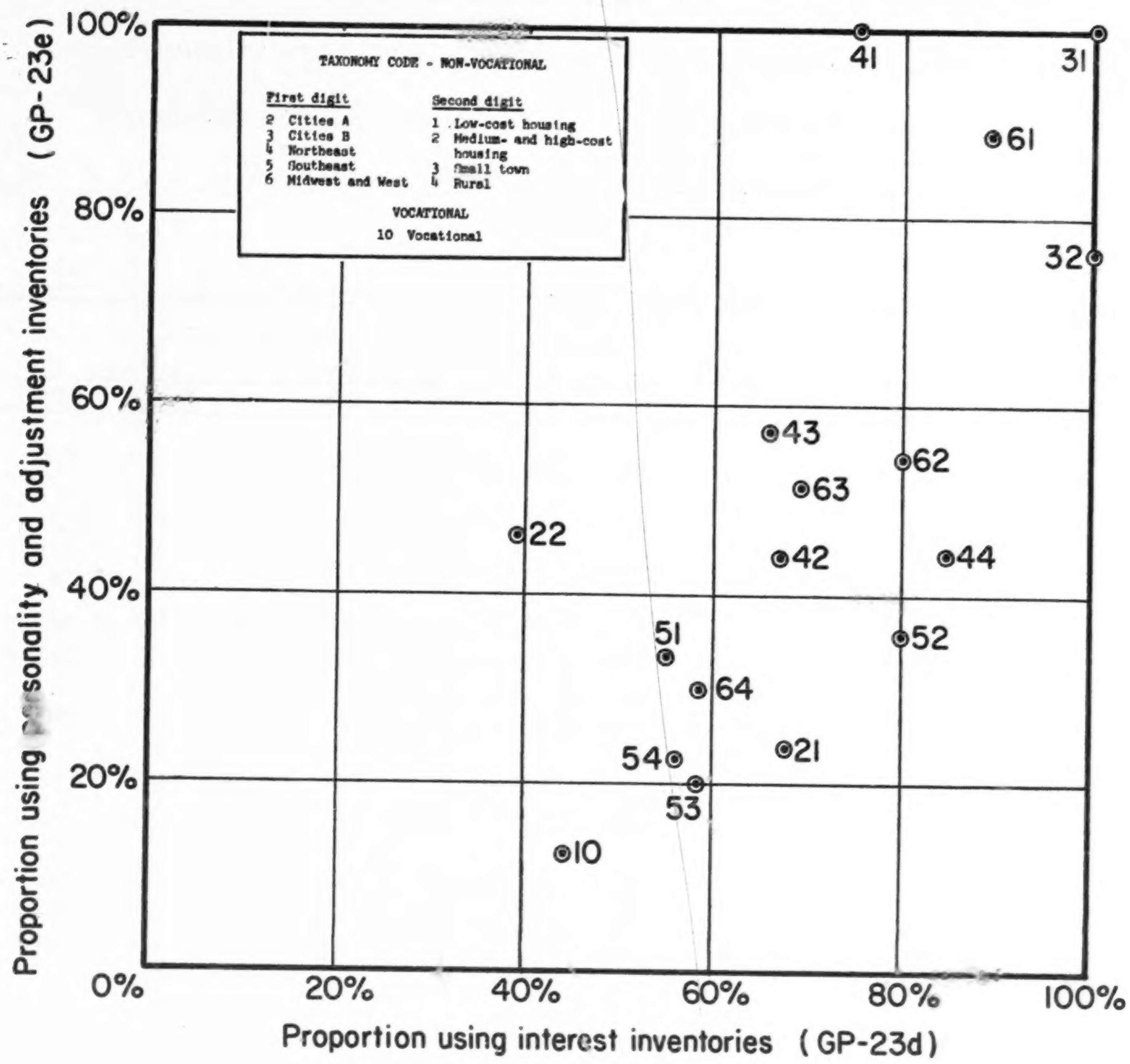


Figure 8-1. Proportion of schools using interest inventories (GP-23d) versus proportion using personality and adjustment inventories (GP-23e) for each taxonomy group

personality measures. The scale at the bottom shows the per cent of responding schools using interest inventories, and the scale at the left shows the per cent of the schools administering personality or adjustment inventories. An appreciable correlation between the tendency to give one versus the other can be seen.

Scholarship tests and per cent of boys going to college

Figure 8-2 shows on the left scale the per cent of boys going to college, (GSC-72) and on the bottom the per cent of the schools in each taxonomy group giving scholarship tests. It can be seen here that all of the Northeast group and all of the urban low-quality housing group tend to be markedly off the trend line in terms of having a low college entrance rate and a very high per cent administering scholarship tests. All of the other groups form nearly a straight trend line, showing a very high positive correlation between the administration of scholarship tests and per cent of the boys entering college.

Purposes for Which Tests are Used

Reporting tests results to parents

Item 13 in the questionnaire asked: "What is the policy of your school on reporting test results to student's parents?" The three responses were: (1) No reports are given; (2) Only interpretative reports are given; and (3) Test scores are reported in addition to an interpretative report.

Table 8-8 shows that the proportion of schools that do not report test results to parents is fairly small, with the exception of the vocational schools, 12%; the Cities B low-quality housing schools, 20%; the Southeast urban low-quality housing schools, 11%; Southeast small town and rural, 17 and 24% respectively; and the Western small town and rural schools, 10 and 9% respectively.

Figure 8-3 shows the relationship of this item with mean Reading Comprehension. The bottom scale of Figure 8-3 shows the proportion of the schools in each group who report test scores and provide interpretive reports (response 3 to this item). The scale on the left represents the average Reading Comprehension score of the schools in each taxonomy group. There appears to be a strong positive relationship here -- that is, the higher the reading level the more likely the school is to report test scores to the parents. Outstanding deviations from this general trend, however, are the Northeastern rural and town schools for example; the Cities B high-quality housing schools; and the Northeastern low-quality housing schools. All four of these groups are at a relatively high reading level and yet the Northeastern low-quality housing schools and the intermediate size cities high-quality housing schools show a stronger than usual tendency to report test scores to parents, whereas the Northeastern town and rural schools show a relatively strong tendency not to report scores to parents. Most of the other schools appear to be very close to the regression line.

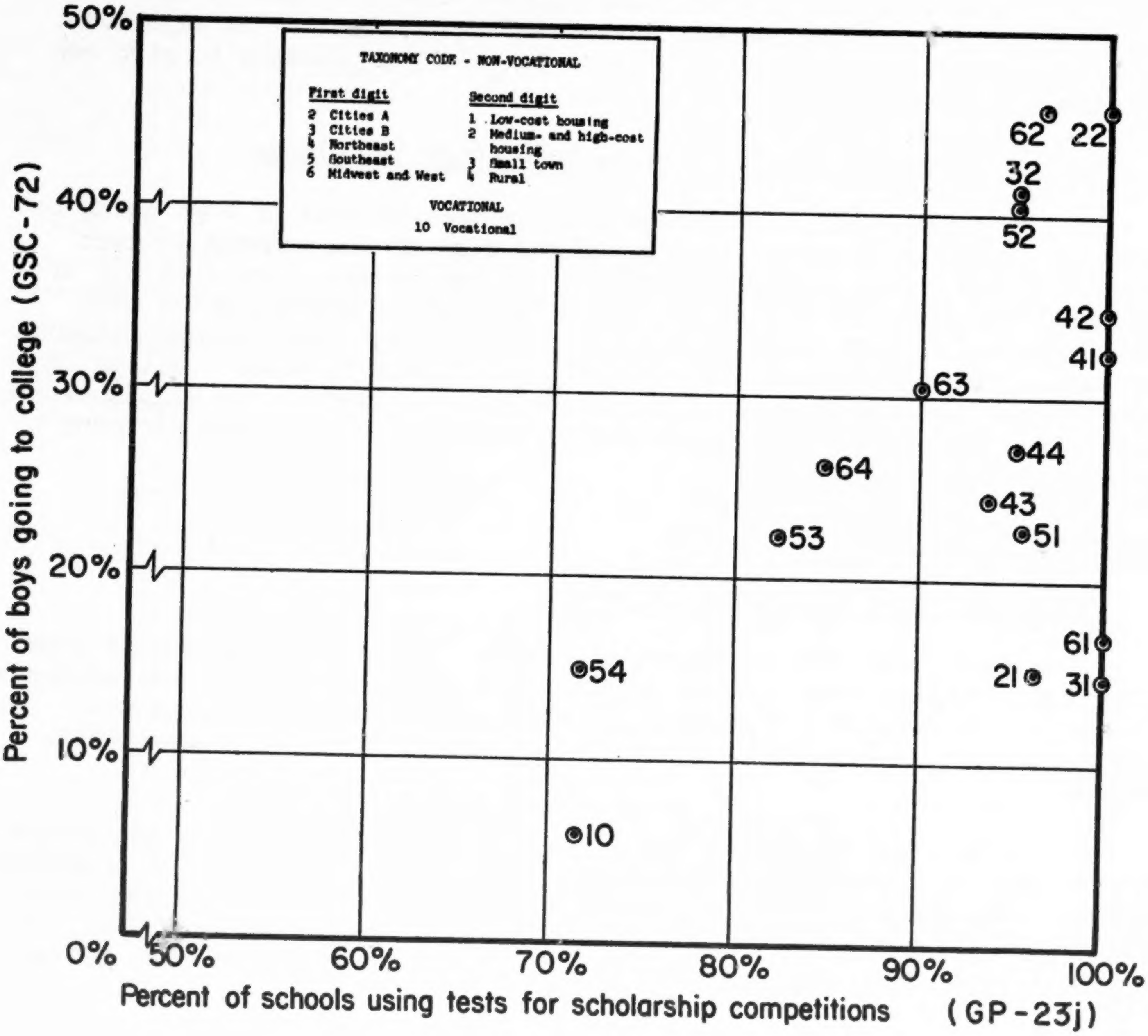


Figure 8-2. Proportion of schools using tests for scholarship competitions (GP-23j) versus proportion of boys going to college (GSC-72) for each taxonomy group

Table 8-8

Reporting Test Results to Parents

GP. What is the policy of your school on reporting test results to students' parents?

1. No reports are given
2. Only interpretive report given
3. Test scores are reported in addition to an interpretive report

Taxonomy Group	Total Schools in Tax. Group	No Reports	Interpretive Report Only	Test Scores and Interpretive Report
10	32	12	66	22
21	26	0	73	27
22	53	2	47	51
31	5	20	60	20
32	19	0	26	74
41	4	0	25	75
42	47	4	43	53
43	28	7	68	25
44	20	5	60	35
51	18	11	67	22
52	36	3	56	42
53	18	17	50	33
54	55	24	45	31
61	10	0	60	40
62	77	0	47	53
63	96	10	54	36
64	86	9	54	37

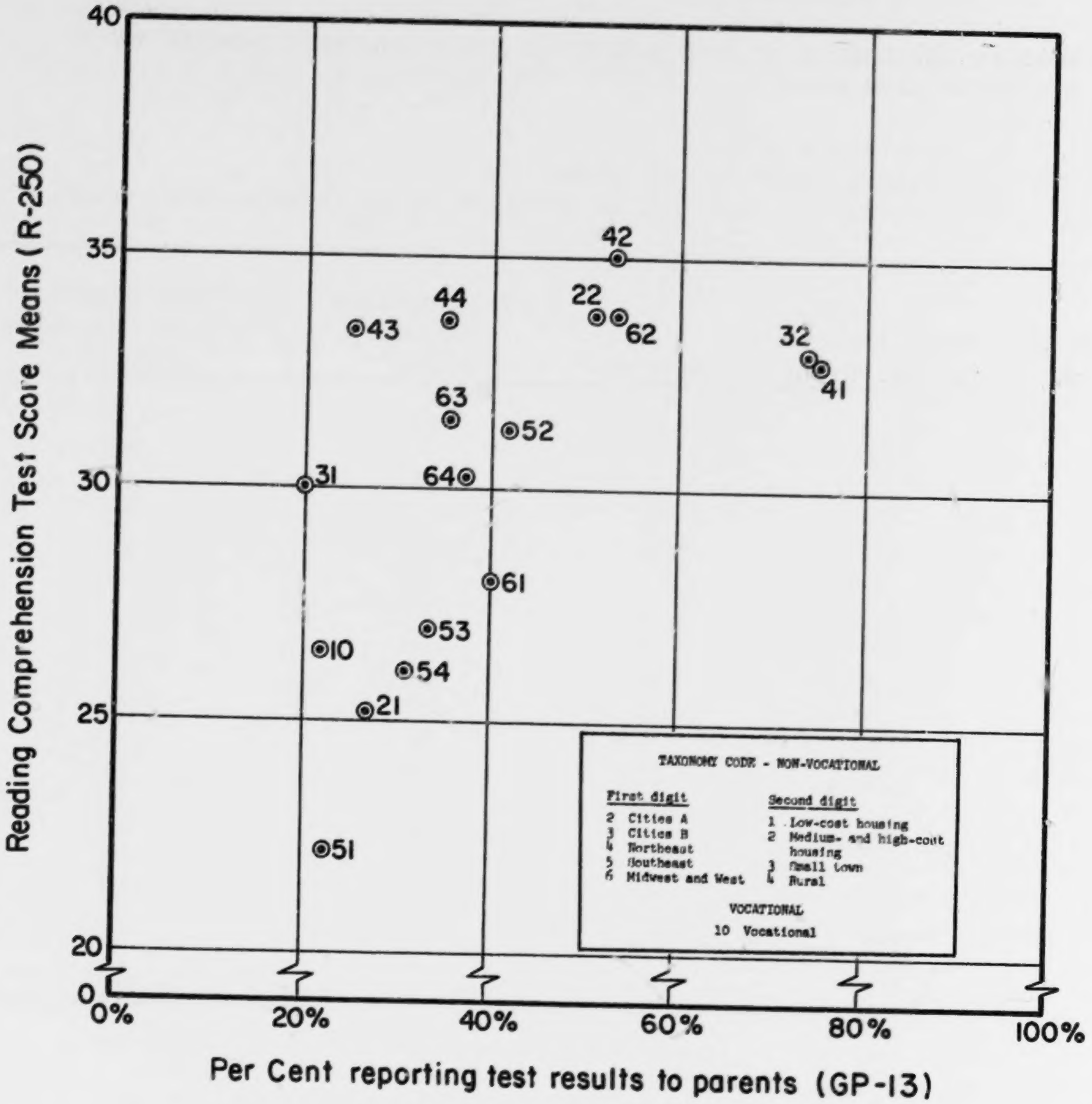


Figure 8-3. Proportion of schools reporting test results to parents (GP-13(3)) versus Reading Comprehension (R-250) school mean test scores for each taxonomy group

Figure 8-4 shows the relationship for quality of housing and reporting test results to parents. There appears to be a slight negative correlation here -- the higher the proportion of low-quality housing, the lower the proportion reporting test scores to parents. An outstanding deviation in this general trend are the schools in the Northeast urban low-quality housing group (Group 41), which is high in terms of the proportion reporting test results to parents.

Other purposes

Table 8-9 shows the results for item GP-25. The most frequently mentioned purposes for which tests are used, as shown in this table, are: as an aid in counseling; to help the student gain a better understanding of himself; to measure the school's growth; to measure the students' growth; as a measure of achievement during the year; and to aid in placing students in the various curricula. Those items mentioned infrequently were as follows: as a screening device for admission to your school and to meet state requirements. It is also interesting to note that the vocational schools (Group 10) stand lower than the average on using tests for comparison of the school with others in the nation (f); as a measure of achievement during the year (g); to evaluate curricula (h); and as a measure of the school's growth (j).

Table 8-10 shows the schools' responses on a variety of other purposes for which tests are used. The data are arranged topically for academic, counseling in mental health, personal, college, vocations, and placement purposes. Referring to Table 8-10 it may be seen that the academic and college items generally receive the highest frequency of mention. For the academic purposes this includes functions such as diagnosing reading, arithmetic, spelling, or other learning difficulties; to advise students on choice of specific high school curricula; to advise the students on choice of specific high school subjects; and for diagnosis of underachievers or other scholastic problems. The college items include the following: to provide information to students on their potentiality for college; to provide information to students on which they may base their choice of a college curriculum; to provide information on the student to colleges or other post-high school institutions; and to provide information to scholarship-granting agencies. It should also be noted for the college items that the vocational schools (Group 10) stand lower than the average on each of the items.

Two other items receiving relatively high frequency of mention were: to aid in interpreting the student's needs to his teachers (p) and to provide information to the student for self-appraisal (t). With these two exceptions, tests are used much less frequently for counseling and mental health purposes, for personal problems, for vocational purposes, and for placement. These results are consistent with the results shown in Chapter 3 that indicate that the counselors' duties and functions are concentrated on academic and college problems.

Figure 8-5 shows several of these items for the various groups of schools. This figure shows that tests are used almost universally as

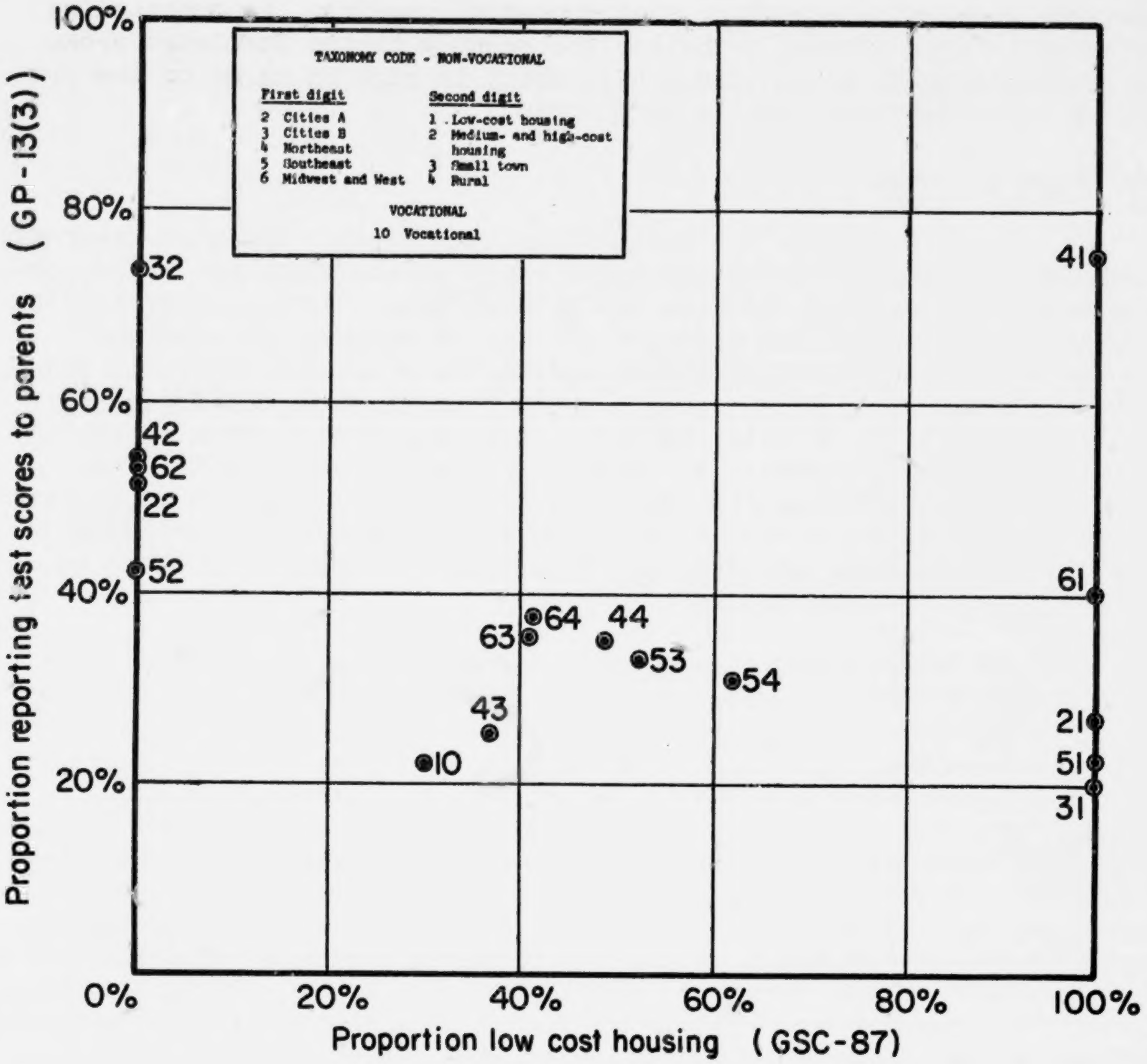
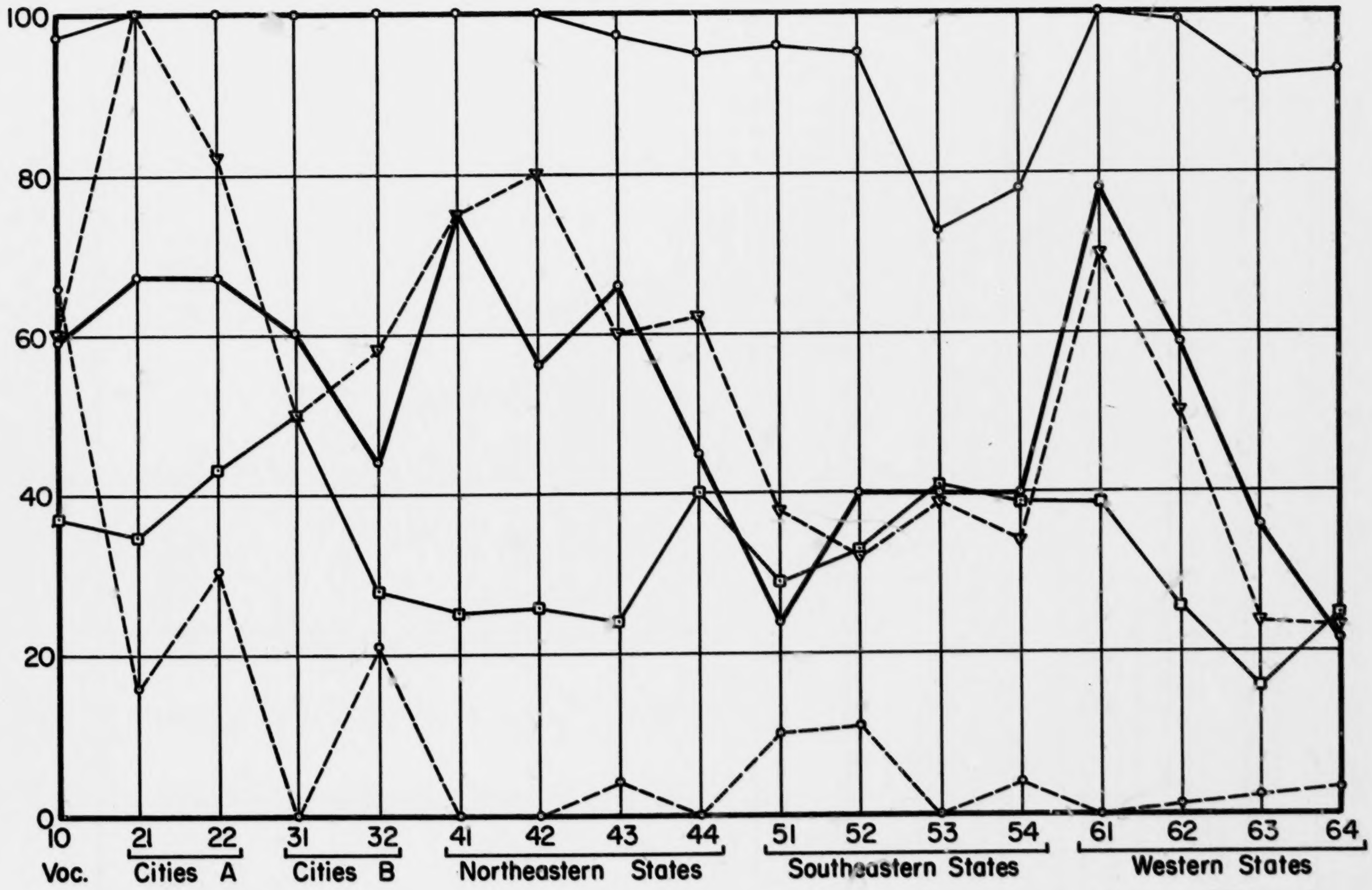


Figure 8-4. Proportion of schools in low-cost housing areas (GSC-87) versus the proportion reporting test scores to parents (GP-13(3)) by taxonomy groups



Item	Symbol
25a	□——□
25b	○━━○
25c	▽- - -▽
25e	○- - -○
25l	○——○

Figure 8-5. Proportion of public senior high schools in each taxonomy group using tests and inventories for various purposes

Table 8-9

Use Made of Test and Inventory Results

GP-25. For which of the following purposes are test or inventory results used in your school?

- a. To meet state requirements
- b. To aid in establishing homogeneous classes according to ability in each subject
- c. To aid in establishing homogeneous groups or tracks in each grade
- d. To aid in placing students in the various curricula (business, vocational, college preparatory)
- e. As a screening device for admission to your school
- f. For comparison of your school with others in the nation
- g. As measure of achievement during the year
- h. To evaluate curricula
- i. To measure the students' growth
- j. To measure the school's growth
- k. To help the student gain a better understanding of himself
- l. As an aid in counseling

Taxonomy Group	No. Schools Testing	Per Cent of Schools Testing											
		a	b	c	d	e	f	g	h	i	j	k	l
10	32	31	53	56	84	59	22	53	38	88	38	81	94
21	26	27	54	96	73	12	27	65	62	81	50	85	96
22	53	30	57	75	66	23	45	60	51	70	64	89	98
31	5	60	40	40	80	0	80	100	40	100	60	100	100
32	21	24	38	52	62	19	71	76	67	95	76	95	90
41	4	25	75	75	75	--	75	50	50	50	50	100	100
42	47	26	55	70	91	--	51	79	47	87	55	94	100
43	31	23	61	58	90	3	68	74	71	94	71	87	97
44	21	38	43	62	86	--	76	86	62	86	76	95	95
51	22	27	23	36	59	9	55	86	68	82	55	86	95
52	42	29	36	29	62	10	62	90	79	--	81	95	90
53	39	36	36	36	49	--	44	69	41	82	56	72	69
54	87	34	38	31	45	3	51	79	60	84	67	77	76
61	11	27	64	64	64	--	73	82	82	100	91	100	100
62	80	25	59	48	76	1	68	75	71	93	68	98	99
63	131	15	34	22	69	2	62	79	63	87	65	88	90
64	126	23	21	21	56	2	71	80	61	67	65	87	88

Table 8-10

GP-26. To what extent are test or inventory results used for each of these purposes?

Academic

a. To diagnose reading, arithmetic, spelling, or other learning difficulties
c. To advise the students on choice of specific high school curriculums
d. To advise the students on choice of specific high school subjects
e. For diagnosis of underachievers or other scholastic problems

Counseling and Mental Health

f. To counsel potential high school dropouts
g. As a basis for recommending transfer to schools for special abilities (vocational, art, music, etc.)
j. As a basis for recommending transfer to schools for mental defectives
k. To provide information to professional workers (social workers, physicians, welfare agencies, etc.) concerned with the student's welfare
p. To aid in interpreting the student's needs to his teachers

Personal

b. To diagnose personality or adjustment difficulties
o. To provide information to students on their personality and adjustment
t. To provide information to the student for self-appraisal

College

l. To provide information to students on their potentiality for college
m. To provide information to students on which they may base their choice of a college curriculum
r. To provide information on the student to colleges or other post high school educational institutions
s. To provide information to scholarship granting agencies

Vocations

h. As an aid in placing students in jobs
i. As an aid for recommending students for jobs
n. To provide information to students on their occupational potential

Placement

q. To provide information on the student to prospective employers

Table 8-10 (continued)

Taxonomy Group	No. Schools Testing	Per Cent Schools Testing a	b	c	d	e	f	g	h	i	j
10	32	78	28	62	50	75	47	25	41	44	16
21	26	88	27	81	81	77	62	31	35	38	4
22	53	85	34	81	83	96	62	36	32	42	17
31	5	80	40	20	40	80	40	40	20	40	20
32	21	81	38	81	81	86	57	38	48	48	19
41	4	100	75	75	50	50	25	25	25	75	25
42	47	70	26	91	87	89	47	34	30	43	13
43	31	77	35	87	81	74	32	6	23	35	16
44	21	71	24	86	81	81	33	10	29	29	10
51	22	64	23	50	59	64	23	5	14	18	9
52	42	67	29	69	76	69	33	12	26	38	2
53	39	54	23	54	51	54	26	13	21	28	--
54	87	55	18	48	48	40	30	7	15	29	2
61	11	82	45	100	100	91	73	73	27	64	45
62	80	68	35	91	85	81	52	19	26	41	11
63	131	58	28	70	67	50	31	7	20	32	6
64	126	54	26	63	65	56	32	12	27	37	6

Taxonomy Group	No. Schools Testing	Per Cent Schools Testing k	l	m	n	o	p	q	r	s	t
10	32	47	59	38	62	19	66	31	50	41	38
21	26	35	88	73	69	8	58	15	62	58	58
22	53	45	96	87	68	26	72	36	91	91	87
31	5	40	80	60	40	60	60	40	100	100	100
32	21	43	86	81	76	33	71	43	81	81	86
41	4	75	75	100	100	50	75	75	75	75	100
42	47	36	100	94	83	21	85	64	100	94	89
43	31	35	97	94	77	35	74	26	84	74	74
44	21	33	95	90	81	29	76	29	81	67	86
51	22	23	82	82	59	23	64	14	77	77	86
52	42	23	83	74	67	19	69	29	79	81	74
53	39	21	74	64	49	15	49	23	56	59	49
54	87	23	71	60	55	16	61	28	59	51	48
61	11	55	100	100	100	36	91	64	82	100	100
62	80	31	98	89	85	34	76	31	78	84	82
63	131	24	87	79	76	25	62	34	74	61	63
64	126	21	85	74	69	26	59	33	65	59	64

an aid to counseling; the exceptions being in the rural and town schools in the Southeast (Groups 53 and 54). Tests seem to be infrequently used for screening admission to the school, except in the large city and vocational high schools. In the vocational schools 66 per cent said they use tests for admission.

Summary and Research Plans

This chapter presented findings on the school's use of tests, trends in the use of tests, types of tests used, reporting test results to parents, and the purposes for which tests are used. Preliminary unweighted data were shown by taxonomy group in order to explore the response distributions and to examine variation by region, city size, rural versus urban status, and socio-economic level of the community (housing quality). (Inasmuch as the data are unweighted, they should be generalized to the national population with caution.) The results are summarized as follows:

1. The percentage of schools using standardized tests was very high. The areas in which less than 95% of the schools were using standardized tests were the Southeastern rural schools, 90%; Southeastern urban low-quality housing schools, 92%; and Western low-quality housing urban schools, 92%.

2. Large proportions of the schools indicated that they had increased their participation in testing programs in recent years and also planned to increase their use of standardized tests. In addition, almost all the schools thought that they were making more effective use of tests than they were two years earlier (1958). These data appear to show little visible reaction against the use of standardized tests.

3. The particular types of tests used and whether the tests were administered to all students, to groups, or to individual students, showed considerable variation according to taxonomy group. It was frequently noted that vocational schools and Southeastern schools were lower than the average for particular tests. For example, the vocational schools infrequently used multiple aptitude batteries, interest inventories, or personality inventories. Also of interest was that the particular type of standardized achievement tests used did not appear to be consistently related to region, socio-economic factors, city size, or rural-urban location. On the other hand, the percentage of the schools administering scholarship tests was shown to be related to the percentage of boys going to college.

4. Large proportions of the schools report test results to parents, either as interpretive reports only, or in terms of test scores and interpretive reports. Reporting test scores and providing an interpretive report was shown to be positively related to the average reading comprehension score of the students in the schools and negatively related to the quality of the housing served by the school. These findings are interpreted as follows: the higher the reading level, the more likely the school is to report test scores to parents; the larger the proportion of low-quality housing in the neighborhood of the school, the lower the proportion reporting test results to parents.

5. The schools reported that tests were used most frequently to aid in placing students in the various curricula; as a measure of achievement; to measure the student's growth; to measure the school's growth; to help the student gain a better understanding of himself; as an aid in counseling; and for various academic and college purposes. The vocational schools appeared to be exceptions on many of these items, standing low relative to the other groups of schools.

6. Further research will be conducted using these items to show the extent of testing in various areas such as the extent of use of intellectual tests and the extent of use of non-intellectual tests.

Chapter 9

RELATIONSHIPS OF SCHOOL AND COMMUNITY CHARACTERISTICS TO APTITUDE AND ACHIEVEMENT TESTS

Composition of the Sample

In order to investigate the unique relationships between community characteristics and various measures of school outcomes, a special sample of Project Talent schools was picked. This sample consisted of 206 public high schools in towns between 2500 and 25,000 population that had only one high school. A correlation matrix has been computed for a combination of school characteristics, community characteristics, and test variables for this sample. The community characteristics data were obtained from the Bureau of the Census publication, General Social and Economic Characteristics (Census, 1960), by matching high school areas to corresponding census tracts. These data were provided by J. Alan Thomas, Associate Director, Stanford School Finance Project. Of course, there was not always an exact correspondence between the boundaries of school areas and census tracts. To the extent that this is true, the correlations obtained are lower than they would be if there had been a perfect correspondence of boundaries.

The composition of the matrix is shown in Table 9-1. Table 9-2 shows how the sample is distributed in terms of taxonomy group membership. It can be seen that the sample consists primarily of the smaller urban schools and larger town schools. No large city schools or vocational schools and few rural schools met the specifications for inclusion.

The Correlations

The intercorrelations are shown in Table 9-3. Since on many of the questionnaire items there are some missing data, the correlations are computed by the incomplete data method. In other words, each correlation is based on the separate N for those schools that are complete for that particular combination. The computations were weighted to compensate for differential sampling ratio and participation rate.

Table 9-1

Variables in the School and Community Characteristics Matrix

Var. No.	Code*	Description
1.	SSA-1	Population of town (in 1000's)
2.	SSA-2	Median Years school completed (to tenths)
3.	SSA-3	Civilian Labor Force: Percent unemployed (to tenths)
4.	SSA-4	Civilian Labor Force: Percent manufacturers (to tenths)
5.	SSA-5	Median Family Income (tens of $)
6.	SSA-6	Miles from nearest city of 100,000
7.	SSA-7	Population: Percent rural farm (to tenths)
8.	SSA-8	Children in elementary school: Percent private school (to tenths)
9.	SSA-9	Percent of population residing in state of birth (to tenths)
10.	SSA-10	Civilian Labor Force: Percent white collar by county (to tenths)
11.	SSA-11	Percent of homes owner-occupied (to tenths)
12.	GSC-59	Total number of Grade 12 students
13.	GSC-56	Starting salary, male teachers
14.	GSC-89	Per-pupil expenditures
15.	GSC-87	Quality of housing
16.	R-190-10M	Information I Total Mean: Grade 10 boys
17.	R-190-10F	Information I Total Mean: Grade 10 girls
18.	R-190-12M	Information I Total Mean: Grade 12 boys
19.	R-190-12F	Information I Total Mean: Grade 12 girls
20.	R-230-10	English Total Mean: Grade 10
21.	R-230-12	English Total Mean: Grade 12
22.	R-250-10	Reading Comprehension Mean: Grade 10
23.	R-250-12	Reading Comprehension Mean: Grade 12
24.	R-260-12	Creativity Mean: Grade 12
25.	R-270-12	Mechanical Reasoning Mean: Grade 12
26.	R-290-10	Abstract Reasoning Mean: Grade 10
27.	R-290-12	Abstract Reasoning Mean: Grade 12
28.	R-312-10	Math II Mean: Grade 10
29.	R-311-12	Math I Mean: Grade 12
30.	R-312-12	Math II Mean: Grade 12
31.	R-333-12	Math III Mean: Grade 12
32.	R-107-12M	Physical Science Information Mean: Grade 12 boys
33.	R-112-12M	Mechanical Information Mean: Grade 12 boys
34.	GSC-1	Type secondary school
35.	GSC-2	Grades included
36.	GSC-6	Number of days in school year
37.	GSC-9	Class size: math and science
38.	GSC-10	Class size: other
39.	GSC-11	Homework per day
40.	GSC-12	Study halls per week
41.	GSC-29	Absenteeism: average daily percent
42.	GSC-32	Books in library
43.	GSC-33	Age of school plant
44.	GSC-39	Homogeneous grouping
45.	GSC-57	Starting salary, female teachers
46.	GSC-58	Teaching experience, average amount
47.	GSC-69	Percent juvenile delinquents
48.	GSC-70	Percent dropouts (boys)
49.	GSC-72	Percent college (boys)
50.	GP-1	Have guidance program

*Code SSA means card SSA -- followed by variable number
GSC means Gen. Sch. Char. Questionnaire -- followed by item number
GP means Guidance Program Questionnaire -- followed by item number
R means Rights score -- followed by test variable,number, grade, sex

Table 9-2

Table of Taxonomy Groups

Public Senior High Schools
and Thomas Stanford Sample

Tax. Code	Description	N*	Thomas N*	Samp. %
10	All vocational high schools	35	0	0.0
21	Cities A - low-cost housing - low income	27	0	0.0
22	Cities A - moderate and high-cost housing	55	0	0.0
31	Cities B - low-cost housing and low income	5	0	0.0
32	Cities B - moderate and high-cost housing	21	0	0.0
41	Northeast - urban - low-cost housing & low income	4	2	50.0
42	Northeast - urban - moderate & high-cost housing	47	24	51.1
43	Northeast - small-town	31	12	38.7
44	Northeast - rural	22	1	4.5
51	Southeast - urban - low-cost housing & low income	24	16	66.7
52	Southeast - urban - moderate & high-cost housing	45	25	55.6
53	Southeast - small-town	42	19	45.2
54	Southeast - rural	101	14	13.9
61	West - urban - low-cost housing & low income	11	8	72.7
62	West - urban - moderate & high-cost housing	83	48	57.8
63	West - small-town	138	32	23.2
64	West - rural	131	5	3.8
	Total	822	206	25.1

Note - City sizes:

Cities A - more than 1,500,000 population (1960 census)
Cities B - between 250,000 and 1,499,999 population (1960 census)
Urban - between 5,000 and 249,000 population (1960 census)
Small-town - less than 5,000 population

*N = Number of schools

Table 9-3

Intercorrelations among various Selected School and Community Characteristics and Selected Project Talent Tests. (N = 206 schools*)

Var.	Description	Code	Variable No.																										
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
1	Population	SSA-1 **		.092	-.079	.094	.097	-.142	-.181	.148	-.075	.210	.081	.511	.052	.041	-.125	.037	.025	.004	-.011	.052	-.064	.045	-.036	-.086	-.057	.024	-.048
2	Yrs. Sch. Comp.	SSA-2 **	4711		-.224	.006	.556	-.020	-.160	.175	-.296	.379	.253	.258	.441	.307	-.353	.358	.388	.365	.410	.257	.255	.330	.351	.362	.253	.384	.361
3	% unemployed	SSA-3 **	4711	4711		-.118	-.352	.168	.010	-.034	.071	-.045	-.186	-.037	-.066	-.053	.182	-.066	-.093	-.104	-.105	-.080	-.090	-.073	-.094	-.127	-.055	-.121	-.097
4	% manufacturing	SSA-4 **	4711	4711	4711		.307	-.366	-.271	.337	.177	.070	.250	.257	.131	-.002	-.089	.166	.159	.177	.136	.146	.194	.138	.169	.168	.151	.154	.186
5	Family income	SSA-5 **	4711	4711	4711	4711		-.226	-.492	.498	-.387	.647	.498	.431	.656	.537	-.353	.569	.597	.594	.576	.465	.430	.551	.521	.526	.453	.572	.523
6	Mi.to city(100,000)	SSA-6 **	4711	4711	4711	4711	4711		.349	-.160	-.105	-.296	-.284	-.174	-.018	-.040	.066	-.041	-.049	-.034	-.045	-.028	.007	-.043	-.022	.009	.079	-.008	.009
7	%rural-farm	SSA-7 **	4711	4711	4711	4711	4711	4711		-.386	.380	-.592	-.181	-.321	-.243	-.182	.028	-.176	-.167	-.223	-.127	-.141	-.120	-.175	-.152	-.138	-.127	-.160	-.128
8	% priv. schools	SSA-8 **	4711	4711	4711	4711	4711	4711	4711		-.041	.472	.332	.319	.461	.335	-.124	.342	.330	.365	.307	.263	.249	.313	.312	.322	.241	.348	.325
9	% native born	SSA-9 **	4711	4711	4711	4711	4711	4711	4711	4711		-.487	-.131	-.180	-.400	-.300	.121	-.263	-.274	-.253	-.254	-.208	-.129	-.270	-.235	-.209	-.254	-.239	-.188
10	% wh. collar	SSA-10 **	4711	4711	4711	4711	4711	4711	4711	4711	4711		.367	.371	.432	.471	-.251	.402	.414	.389	.364	.321	.226	.385	.358	.322	.292	.326	.327
11	% own homes	SSA-11 **	4711	4711	4711	4711	4711	4711	4711	4711	4711	4711		.194	.391	.311	-.177	.305	.324	.341	.358	.240	.205	.278	.277	.281	.240	.290	.266
12	Size Grade 12	GSC-59	4656	4656	4656	4656	4656	4656	4656	4656	4656	4656	4656		.386	.278	-.411	.413	.393	.419	.359	.332	.349	.395	.379	.374	.395	.401	.411
13	Start.Salary M.tch	GSC-56	4657	4657	4657	4657	4657	4657	4657	4657	4657	4657	4657	4636		.535	-.346	.592	.608	.617	.594	.507	.455	.563	.538	.569	.504	.617	.552
14	Per-pupil Exp($/yr)	GSC-89	4276	4276	4276	4276	4276	4276	4276	4276	4276	4276	4276	4255	4256		-.211	.440	.448	.438	.451	.346	.258	.422	.396	.336	.322	.399	.318
15	% low qual.housing	GSC-87	4636	4636	4636	4636	4636	4636	4636	4636	4636	4636	4636	4615	4616	4235		-.547	-.524	-.549	-.520	-.477	-.498	-.506	-.518	-.518	-.453	-.483	-.537
16	Info. Total I	R-190-10M	4691	4691	4691	4691	4691	4691	4691	4691	4691	4691	4691	4636	4637	4256	4616		.966	.937	.928	.937	.860	.971	.929	.850	.776	.928	.853
17	Info. Total I	R-190-10F	4691	4691	4691	4691	4691	4691	4691	4691	4691	4691	4691	4636	4637	4256	4616	4691		.936	.939	.928	.845	.964	.921	.841	.782	.936	.846
18	Info. Total I	R-190-12M	4616	4616	4616	4616	4616	4616	4616	4616	4616	4616	4616	4561	4562	4181	4541	4616	4616		.929	.902	.918	.921	.959	.906	.821	.892	.899
19	Info. Total I	R-190-12F	4639	4639	4639	4639	4639	4639	4639	4639	4639	4639	4639	4584	4585	4204	4564	4639	4639	4616		.902	.858	.921	.938	.853	.759	.886	.839
20	English Total	R-230-10	4622	4622	4622	4622	4622	4622	4622	4622	4622	4622	4622	4567	4568	4187	4547	4622	4622	4599	4622		.871	.952	.919	.794	.721	.898	.790
21	English Total	R-230-12	4572	4572	4572	4572	4572	4572	4572	4572	4572	4572	4572	4517	4518	4137	4497	4572	4572	4549	4572	4555		.845	.930	.911	.818	.815	.921
22	Read. Comp.	R-250-10	4622	4622	4622	4622	4622	4622	4622	4622	4622	4622	4622	4567	4568	4187	4547	4622	4622	4599	4622	4622	4555		.938	.832	.753	.944	.829
23	Read. Comp.	R-250-12	4572	4572	4572	4572	4572	4572	4572	4572	4572	4572	4572	4517	4518	4137	4497	4572	4572	4549	4572	4555	4572	4555		.909	.806	.898	.904
24	Creativity	R-260-12	4572	4572	4572	4572	4572	4572	4572	4572	4572	4572	4572	4517	4518	4137	4497	4572	4572	4549	4572	4555	4572	4555	4572		.838	.827	.943
25	Mech. Reas.	R-270-12	3416	3416	3416	3416	3416	3416	3416	3416	3416	3416	3416	3383	3362	3045	3363	3416	3416	3393	3416	3399	3416	3399	3416	3416		.733	.847
26	Abst. Reas.	R-290-10	4486	4486	4486	4486	4486	4486	4486	4486	4486	4486	4486	4432	4432	4051	4412	4486	4486	4463	4486	4486	4419	4486	4419	4419	3264		.856
27	Abst. Reas.	R-290-12	4538	4538	4538	4538	4538	4538	4538	4538	4538	4538	4538	4483	4484	4103	4464	4538	4538	4515	4538	4521	4493	4521	4493	4493	3337	4443	
28	Math II	R-312-10	4486	4486	4486	4486	4486	4486	4486	4486	4486	4486	4486	4432	4432	4051	4412	4486	4486	4463	4486	4486	4419	4486	4419	4419	3264	4486	4443
29	Math I	R-311-12	4538	4538	4538	4538	4538	4538	4538	4538	4538	4538	4538	4483	4484	4103	4464	4538	4538	4515	4538	4521	4493	4521	4493	4493	3337	4443	4538
30	Math II	R-312-12	4538	4538	4538	4538	4538	4538	4538	4538	4538	4538	4538	4483	4484	4103	4464	4538	4538	4515	4538	4521	4493	4521	4493	4493	3337	4443	4538
31	Math III	R-333-12	4538	4538	4538	4538	4538	4538	4538	4538	4538	4538	4538	4483	4484	4103	4464	4538	4538	4515	4538	4521	4493	4521	4493	4493	3337	4443	4538
32	Phy.Sci.Info.	R-107-12M	4616	4616	4616	4616	4616	4616	4616	4616	4616	4616	4616	4561	4562	4181	4541	4616	4616	4616	4616	4599	4549	4599	4549	4549	3393	4463	4515
33	Mech. Info.	R-112-12M	4616	4616	4616	4616	4616	4616	4616	4616	4616	4616	4616	4561	4562	4181	4541	4616	4616	4616	4616	4599	4549	4599	4549	4549	3393	4463	4515
34	% Gen. Comp. HS	GSC-1	4678	4678	4678	4678	4678	4678	4678	4678	4678	4678	4678	4656	4657	4276	4636	4658	4658	4582	4605	4588	4538	4588	4538	4538	3383	4453	4505
35	% HS inc.full Elem	GSC-2	4678	4678	4678	4678	4678	4678	4678	4678	4678	4678	4678	4656	4657	4276	4636	4658	4658	4582	4605	4588	4538	4588	4538	4538	3383	4453	4505
36	Sch. days per year	GSC-6	4619	4619	4619	4619	4619	4619	4619	4619	4619	4619	4619	4597	4598	4217	4577	4599	4599	4523	4546	4546	4480	4546	4480	4480	3324	4411	4446
37	Class size math.sci	GSC-9	4678	4678	4678	4678	4678	4678	4678	4678	4678	4678	4678	4656	4657	4276	4636	4658	4658	4582	4605	4588	4538	4588	4538	4538	3383	4453	4505
38	Class size (other)	GSC-10	4638	4638	4638	4638	4638	4638	4638	4638	4638	4638	4638	4616	4617	4236	4596	4618	4618	4542	4565	4548	4498	4548	4498	4498	3343	4413	4465
39	Homework (hrs/day)	GSC-11	4658	4658	4658	4658	4658	4658	4658	4658	4658	4658	4658	4636	4637	4256	4616	4638	4638	4562	4585	4568	4518	4568	4518	4518	3363	4433	4485
40	% w. study periods	GSC-12	4678	4678	4678	4678	4678	4678	4678	4678	4678	4678	4678	4656	4657	4276	4636	4658	4658	4582	4605	4588	4538	4588	4538	4538	3383	4453	4505
41	% Absenteeism	GSC-29	4658	4658	4658	4658	4658	4658	4658	4658	4658	4658	4658	4636	4637	4256	4616	4638	4638	4562	4585	4568	4518	4568	4518	4518	3363	4433	4485
42	No.books in libry.	GSC-32	4550	4550	4550	4550	4550	4550	4550	4550	4550	4550	4550	4550	4529	4170	4508	4530	4530	4454	4477	4460	4410	4460	4410	4410	3276	4346	4377
43	Age sch. building	GSC-33	4629	4629	4629	4629	4629	4629	4629	4629	4629	4629	4629	4607	4608	4254	4588	4609	4609	4533	4557	4540	4490	4540	4490	4490	3334	4404	4478
44	% Sch.jomog.gr.	GSC-39	4658	4658	4658	4658	4658	4658	4658	4658	4658	4658	4658	4636	4637	4256	4616	4638	4638	4562	4585	4568	4518	4568	4518	4518	3363	4433	4485
45	Start.Salary F.tch	GSC-57	4657	4657	4657	4657	4657	4657	4657	4657	4657	4657	4657	4636	4657	4256	4616	4637	4637	4562	4585	4568	4518	4568	4518	4518	3362	4432	4484
46	Yrs. teaching exp.	GSC-58	4661	4661	4661	4661	4661	4661	4661	4661	4661	4661	4661	4639	4640	4259	4619	4641	4641	4565	4588	4588	4521	4588	4521	4521	3366	4453	4488
47	% juv. del.	GSC-69	4678	4678	4678	4678	4678	4678	4678	4678	4678	4678	4678	4656	4657	4276	4636	4658	4658	4582	4605	4588	4538	4588	4538	4538	3383	4453	4505
48	% dropout (boys)	GSC-70	4656	4656	4656	4656	4656	4656	4656	4656	4656	4656	4656	4634	4635	4254	4614	4636	4636	4560	4583	4566	4516	4566	4516	4516	3361	4431	4493
49	% college(boy grads)	GSC-72	4625	4625	4625	4625	4625	4625	4625	4625	4625	4625	4625	4604	4605	4224	4584	4605	4605	4582	4605	4588	4538	4588	4538	4538	3383	4453	4505
50	% w. guid.program	GP -1	4678	4678	4678	4678	4678	4678	4678	4678	4678	4678	4678	4656	4657	4276	4636	4658	4658	4582	4605	4588	4538	4588	4538	4538	3383	4453	4505

NOTE: Upper right portion of metrix is the correlation coefficients.
The lower left portion is the weighted N which is specific to that correlation.

* Includes all Project TALENT public senior high schools located in cities of population 2,500 to 25,000 where there is only one public senior high school.

**Data for variables 1 through 11 provided by J. Alan Thomas from his dissertation entitled: "Efficiency in Education: A Study of the Relationship between Selected Inputs and Test Scores in a Sample of Senior High Schools", Stanford University, 1962.

Table 9-3 (continued)

Intercorrelations among various Selected School and Community Characteristics
and Selected Project Talent Tests. (N = 206 schools*)

Var.	Description	Code	Variable No.																								
			28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	M	σ	Wtd.N****
1	Population	SSA-1 **	-.019	-.065	-.036	.012	-.024	-.027	-.046	-.154	.137	-.055	-.063	-.051	.041	.018	.136	-.020	-.085	.068	.207	.055	-.013	.066	.193	8143.00	4992.00	4711
2	Yrs. Sch. Comp.	SSA-2 **	.301	.363	.360	.371	.359	.338	-.008	-.063	.145	-.056	-.089	.055	.012	-.227	.241	-.055	-.089	.437	-.011	.093	-.210	.213	.210	10.32	1.46	4711
3	% unemployed	SSA-3 **	-.178	-.119	-.128	-.193	-.081	-.092	-.067	-.014	-.007	.044	.016	-.088	.002	-.012	-.068	.149	-.016	-.047	.024	-.069	.013	-.140	-.067	5.32	2.81	4711
4	% manufacturing	SSA-4 **	.099	.170	.124	.097	.134	.138	.094	-.145	.224	.130	.100	-.028	-.035	-.081	.207	.079	-.137	.157	.098	-.107	.091	-.184	.117	26.70	16.15	4711
5	Family income	SSA-5 **	.485	.523	.508	.553	.573	.542	.178	-.266	.286	-.207	-.229	.006	.040	-.240	.265	.026	-.250	.683	-.069	.127	-.153	.254	.263	52.31	13.56	4711
6	Mi.to city(100,000)	SSA-6 **	-.010	-.017	-.001	-.004	-.006	-.021	-.033	.045	-.123	-.044	.001	-.047	-.007	-.058	-.078	.015	.097	-.019	-.073	.093	-.149	-.012	.008	59.10	52.50	4711
7	% rural-farm	SSA-7 **	-.048	-.112	-.096	-.123	-.201	-.216	-.069	.300	-.100	.057	.090	-.024	-.077	-.002	-.160	.092	.259	-.308	.053	-.036	-.010	-.036	-.102	13.47	12.57	4711
8	% priv. schools	SSA-8 **	.193	.291	.269	.288	.363	.313	.089	-.159	.369	-.048	-.130	.025	-.003	-.115	.094	.081	-.240	.477	-.025	.012	-.138	.042	.171	9.57	11.71	4711
9	% native born	SSA-9 **	-.157	-.195	-.183	-.154	-.236	-.301	-.140	.238	.009	.192	.182	.078	-.060	.115	-.096	.050	.085	-.423	.165	-.242	.121	-.179	-.039	78.02	14.55	4711
10	% wh. collar	SSA-10 **	.216	.294	.335	.301	.397	.364	.087	-.313	.183	-.145	-.281	.016	.085	-.140	.168	.018	-.176	.456	-.090	.114	-.072	.237	.107	33.95	8.88	4711
11	% own homes	SSA-11 **	.179	.298	.270	.316	.326	.368	.203	-.094	.161	-.098	-.117	-.053	.027	-.102	.141	.013	-.095	.404	-.149	.033	-.056	.136	.163	64.48	11.36	4711
12	Size Grade 12	GSC-59	.330	.362	.342	.341	.392	.372	.103	-.335	.202	.058	.015	-.047	.060	-.166	.375	.037	-.278	.405	.197	.114	-.057	.260	.284	110.73	83.20	4656
13	Start.Salary M.tch	GSC-56	.508	.553	.514	.545	.586	.594	.200	-.176	.278	-.271	-.308	-.084	.031	-.358	.301	.151	-.259	.967	-.050	.102	-.243	.262	.254	3730.50	630.50	4657
14	Per-pupil Exp($/yr)	GSC-89	.310	.349	.383	.426	.454	.408	.170	-.064	.366	-.278	-.386	-.062	.165	-.146	.128	.071	-.050	.559	-.003	.070	-.165	.207	.194	334.14	144.67	4276
15	% low qual.housing	GSC-87	-.456	-.505	-.487	-.445	-.511	-.528	-.216	.214	-.188	.162	.109	.043	.036	.300	-.363	-.134	.171	-.316	-.142	.005	.193	-.377	-.319	33.80	47.30	4636
16	Info. Total I	R-190-10M	.889	.896	.872	.775	.905	.911	.295	-.301	.210	-.303	-.314	-.077	.089	-.506	.388	.282	-.233	.572	.181	.168	-.097	.462	.355	123.03	25.99	4691
17	Info. Total I	R-190-10F	.977	.892	.870	.790	.907	.910	.257	-.280	.222	-.340	-.339	-.066	.054	-.508	.383	.266	-.228	.593	.134	.185	-.094	.478	.338	111.22	21.18	4691
18	Info. Total I	R-190-12M	.834	.941	.913	.838	.954	.952	.288	-.311	.207	-.260	-.257	-.056	.075	-.478	.452	.264	-.250	.599	.186	.159	-.112	.486	.359	141.77	28.09	4616
19	Info. Total I	R-190-12F	.824	.915	.891	.825	.885	.903	.277	-.197	.222	-.294	-.291	-.091	.048	-.451	.370	.310	-.174	.578	.189	.134	-.112	.456	.308	124.05	21.53	4639
20	English Total	R-230-10	.859	.872	.849	.739	.857	.893	.301	-.262	.155	-.344	-.344	-.105	.029	-.493	.373	.332	-.176	.477	.230	.163	-.070	.436	.317	76.98	8.26	4622
21	English Total	R-230-12	.762	.929	.880	.777	.844	.875	.314	-.307	.120	-.148	-.103	-.070	.059	-.447	.476	.238	-.251	.436	.317	.182	-.044	.472	.287	83.06	8.17	4572
22	Read. Comp.	R-250-10	.881	.885	.866	.744	.885	.902	.273	-.290	.185	-.337	-.338	-.094	.081	-.494	.376	.296	-.182	.536	.196	.174	-.061	.464	.314	26.18	5.97	4622
23	Read. Comp.	R-250-12	.819	.942	.909	.799	.897	.935	.324	-.285	.161	-.248	-.234	-.106	.069	-.454	.417	.279	-.178	.519	.270	.153	-.079	.462	.297	30.68	6.38	4572
24	Creativity	R-260-12	.748	.907	.870	.761	.852	.874	.234	-.306	.172	-.146	-.112	-.068	.079	-.455	.434	.180	-.211	.547	.239	.161	-.093	.452	.280	8.97	2.21	4572
25	Mech. Reas.	R-270-12	.635	.812	.787	.662	.795	.787	.279	-.416	.139	-.185	-.094	-.143	.097	-.365	.409	.196	-.136	.488	.160	.312	.018	.501	.219	10.34	2.49	3416 ***
26	Abst. Reas.	R-290-10	.861	.883	.836	.766	.838	.891	.254	-.210	.220	-.295	-.284	-.084	.067	-.421	.335	.262	-.231	.594	.188	.148	-.074	.421	.290	7.91	1.58	4486
27	Abst. Reas.	R-290-12	.751	.925	.884	.756	.842	.861	.238	-.287	.190	-.116	-.087	-.055	.082	-.414	.450	.189	-.269	.536	.275	.155	-.037	.473	.234	8.63	1.85	4538
28	Math II	R-312-10		.815	.851	.759	.804	.799	.206	-.229	.165	-.261	-.265	-.007	.062	-.456	.309	.249	-.187	.463	.146	.139	-.078	.440	.287	9.24	1.90	4486
29	Math I	R-311-12	4443		.928	.830	.862	.911	.296	-.208	.183	-.177	-.179	-.042	.040	-.434	.409	.263	-.247	.529	.292	.092	-.057	.451	.221	8.56	1.90	4538
30	Math II	R-312-12	4443	4538		.890	.881	.861	.222	-.229	.195	-.211	-.245	-.017	.072	-.398	.366	.224	-.207	.484	.250	.136	-.012	.498	.202	10.26	2.31	4538
31	Math III	R-333-12	4443	4538	4538		.794	.743	.195	-.153	.242	-.194	-.253	-.009	.061	-.334	.353	.137	-.246	.519	.173	.114	-.067	.495	.215	3.40	0.87	4538
32	Psy.Sci.Info.	R-107-12M	4463	4515	4515	4515		.885	.257	-.275	.228	-.249	-.281	-.008	.057	-.446	.360	.234	-.245	.561	.135	.142	-.121	.478	.314	9.45	2.45	4616
33	Mech. Info.	R-112-12M	4463	4515	4515	4515	4616		.304	-.309	.154	-.302	-.276	-.137	.066	-.477	.417	.264	-.204	.584	.172	.182	-.139	.413	.353	12.76	2.38	4616
34	% Gen.Comp.HS	GSC-1	4453	4505	4505	4505	4582	4582		-.028	.051	-.013	-.035	.003	-.092	-.145	.064	.059	-.144	.191	.048	-.063	.043	.078	.020	95.50	20.70	4678
35	% HS inc.full Elem	GSC-2	4453	4505	4505	4505	4582	4582	4678		.056	.003	.013	.078	-.138	.129	-.253	-.029	.188	-.198	.022	-.253	-.005	-.133	-.253	23.70	42.50	4678
36	Sch.days per year	GSC-6	4411	4446	4446	4446	4523	4523	4619	4619		-.082	-.145	.045	-.004	-.104	.172	.155	-.042	.263	.113	-.010	-.101	.066	.210	179.67	3.61	4619
37	Class size math.sci	GSC-9	4453	4505	4505	4505	4582	4582	4678	4678	4619		.750	.137	.021	.159	.064	-.140	-.040	-.276	.038	-.144	.077	-.099	-.192	26.02	4.07	4678
38	Class size(other)	GSC-10	4413	4465	4465	4465	4542	4542	4638	4638	4579	4638		.115	-.051	.129	.079	-.120	.085	-.318	.068	-.098	.070	-.096	-.170	28.26	4.18	4638
39	Homework (hrs/day)	GSC-11	4433	4485	4485	4485	4562	4562	4658	4658	4599	4658	4638		.064	-.150	-.025	-.069	-.061	-.066	-.045	-.166	.037	.117	-.119	1.80	0.65	4656
40	% w.study periods	GSC-12	4453	4505	4505	4505	4582	4582	4678	4678	4619	4678	4638	4658		-.086	.102	-.133	-.051	.062	-.004	.030	.094	.160	.094	91.00	28.60	4678
41	% Absenteeism	GSC-29	4433	4485	4485	4485	4562	4562	4658	4658	4599	4658	4638	4658	4658		-.252	-.107	.144	-.347	-.158	-.063	.049	-.273	-.212	5.52	2.75	4658
42	No.books in libry.	GSC-32	4346	4377	4377	4377	4454	4454	4550	4550	4491	4550	4530	4550	4550	4550		.076	-.196	.302	.193	.111	-.010	.352	.243	24.25	702.00	4550
43	Age sch. building	GSC-33	4404	4478	4478	4478	4533	4533	4629	4629	4570	4629	4589	4609	4629	4609	4501		-.012	.143	.275	-.009	-.049	-.066	.053	20.18	16.18	4629
44	% Sch.homog.gr.	GSC-39	4433	4485	4485	4485	4562	4562	4658	4658	4599	4658	4638	4658	4658	4658	4550	4509		-.258	-.071	-.104	-.083	-.108	-.237	78.00	41.40	4658
45	Start.Salary F.tch	GSC-57	4432	4484	4484	4484	4562	4562	4657	4657	4598	4657	4617	4637	4657	4637	4529	4608	4637		-.043	.116	-.221	.218	.262	3694.50	621.50	4657
46	Yrs. teaching exp.	GSC-58	4453	4488	4488	4488	4565	4565	4661	4661	4619	4661	4621	4641	4661	4641	4533	4612	4641	4640		.077	.101	.086	.035	11.39	3.18	4661
47	% juv. del.	GSC-69	4453	4505	4505	4505	4582	4582	4678	4678	4619	4678	4638	4658	4678	4658	4550	4629	4658	4657	4661		.137	.072	.094	0.26	1.16	4678
48	% dropout (boys)	GSC-70	4431	4483	4483	4483	4560	4560	4656	4656	4597	4656	4616	4636	4656	4636	4528	4607	4636	4635	4639	4656		-.072	-.198	10.06	7.85	4656
49	% college(boy grads)	GSC-72	4453	4505	4505	4505	4582	4582	4625	4625	4566	4625	4585	4605	4625	4605	4497	4577	4605	4605	4608	4625	4603		.108	30.27	19.27	4625
50	% w. guid. program	GP -1	4453	4505	4505	4505	4582	4582	4678	4678	4619	4678	4638	4658	4678	4658	4550	4629	4658	4657	4661	4678	4656	4625		84.10	36.60	4678

NOTE: Upper right portion of matrix is the correlation coefficients
The lower left portion is the weighted N, which is specific to that correlation.

* Includes all Project TALENT public senior high schools located in cities of population 2,500 to 25,000 where there is only one public senior high school

** Data for variables 1 through 11 provided by J. Alan Thomas from his dissertation entitled: "Efficiency in Education: A Study of the Relationship between Selected Inputs and Test Scores in a Sample of Senior High Schools", Stanford University, 1962.

*** Means were unavailable for some schools at time of computation.

****Weight B used. (Reproduces the national population of public senior high schools in cities of from 2,500 to 25,000 population that have but one public senior high school.)

The Multiple Correlations

Table 9-4 shows multiple R's and Beta weights for 18 Project Talent tests versus other variables. The multiple R values for the various tests run from .77 for Grade 10 school mean in Intermediate Mathematics (R-312) to .87 for Grade 12 male school mean in Information Total (R-190). The highest zero order r's against these criteria run as high as .62 (Information Total--Grade 12 males (R-190) versus starting salary--male teachers (GSC-56)). Some of the others are nearly as high. It will be seen that the relationship between school and community characteristics is quite high. The scores of individual students will be far less predictable than are school means because of the greater variability of individual scores.

Tests Correlate Highly with Family Income and Teacher Salary

Figure 9-1 shows the zero-order correlations between Abstract Reasoning, Mathematics II, and English Total means for the 12th grade versus selected school and community characteristics. The variables are in the order in which pulled by the stepwise multiple regression program. The highest correlation is between Abstract Reasoning (R-290) and starting salary--male teachers (GSC-56). The next highest correlation is between Abstract Reasoning and median family income (SSA-5). This is an interesting combination and suggests that salary for male teachers has a high degree of overlap with median family income for the community. As can be seen later in other figures, this is true. Nevertheless, salary for male teachers turns out to be one of the most important or the most important factor for some tests.

It is very interesting that Abstract Reasoning correlates so highly in comparison with tests like English Total or Mathematics II which are much longer tests. Apparently in dealing with means of groups as large and as homogeneous as schools, the group means become very stable and have very little error of measurement as compared with the score of an individual. Thus the school means for tests may be said to have very high reliability. Perhaps this is analogous to lengthening all of the tests by a factor of 10 or 20. If this is done, the reliabilities of all of them would approach unity, and they would be nearly the same because of the nature of the curve between number of items and level of reliability of the test. The Abstract Reasoning test mean correlations with the school and community characteristics may be used to give us a baseline for estimating the extent to which the school variables have validity for achievement because of overlap with community variables.

Books are Important for English Achievement

Figure 9-2 shows the correlations between starting salary for men (GSC-56), housing quality (GSC-87), and books in library (GSC-32) versus all of the tests in the matrix. Starting salary for men correlates highly with all of the tests, but its profile of correlations has a pronounced dip for its correlation with the means for English Total (R-230)--12th grade. As will be seen later, this causes starting salaries--male teachers almost completely to wash out as a

Table 9-4

Beta Weights and Multiple R's for Selected School and Community Characteristics vs. Selected Project Talent Tests. (N = 206 schools)

Var.	Description	Code	R-190 10M info Total I 16	R-190 10F Info Total I 17	R-190 12M Info Total I 18	R-190 12F Info Total I 19	R-230 10 Eng. Total 20	R-230 12 Eng. Total 21	R-250 10 Read Comp. 22	R-250 12 Read Comp. 23	R-260 12 Creativity 24
1	Population	SSA-1	-.1051	-.1047	-.1497	-.1392	-.0592	-.2209	-.0923	-.2200	-.2738
2	Yrs.Sch.Comp.	SSA-2	.0387	.0605	.0220	.1063	.0105	.0154	.0211	.0913	.0423
3	% Unemployed	SSA-3	.0895	.0714	.0410	.0630	.0334	.0149	.0906	.0256	-.0212
4	% Manufactur.	SSA-4	.0808	.0890	.0464	.0424	.0801	.1068	.0442	.0954	.0541
5	Family income	SSA-5	.2274	.2465	.2008	.2454	.1938	.1452	.3041	.1376	.1374
6	Mi. to city	SSA-6	.0247	.0080	.0646	.0077	.0391	.0901	.0138	.0579	.0986
7	% rural-farm	SSA-7	.0320	.0712	-.0711	.0517	-.0290	-.0159	.0071	.0288	.0343
8	% pri. schools	SSA-8	.1262	.0869	.1379	.0994	.0953	.1134	.1409	.1579	.1328
9	% native born	SSA-9	-.0479	-.0359	-.0119	-.0591	-.0143	.0443	-.0760	-.0443	.0048
10	% wh. collar	SSA-10	-.0403	-.0204	-.0940	-.0828	-.0432	-.0532	-.1000	.0034	.0237
11	% own homes	SSA-11	.0096	.0090	.0657	.0827	-.0030	.0016	-.0006	.0179	.0466
12	Size Grade 12	GSC-59	.0759	.0690	.0650	.0622	.0346	.0512	.0967	.1017	.0882
13	Salary M. teach.	GSC-56	.3354	.1836	.3498	.1816	.4673	.2175	.4791	.2586	.3203
14	$ per pupil	GSC-89	.0673	.0571	.0815	.0661	.0204	-.0068	.0597	.0506	-.0231
15	Qual. housing	GSC-87	-.1619	-.1165	-.1608	-.1326	-.0946	-.1251	-.1225	-.1128	-.1532
34	Type school	GSC-1	.1208	.0834	.0962	.0987	.1541	.1696	.1056	.1675	.0556
35	Grades incl.	GSC-2	-.0558	-.0474	-.0645	.0061	-.0476	-.1036	-.0569	-.0734	-.1102
36	Days per year	GSC-6	-.0852	-.0556	-.0940	-.0628	-.1141	-.0969	-.1065	-.1120	-.0467
37	Size math sci.cl.	GSC-9	-.0469	-.0899	-.0414	-.0568	-.0628	-.0789	-.0676	-.0780	-.0489
38	Size other class	GSC-10	-.1155	-.1012	-.0687	-.0802	-.1805	.0271	-.1512	-.0595	.0503
39	Homework	GSC-11	-.0495	-.0466	-.0274	-.0699	-.0745	-.0615	-.0659	-.0862	-.0659
40	Study Halls	GSC-12	.0445	-.0034	.0180	.0184	-.0013	.0216	.0394	.0350	.0356
41	Absenteeism	GSC-29	-.1865	-.1932	-.1403	-.1312	-.2172	-.1201	-.1990	-.1245	-.1244
42	Books in library	GSC-32	.0455	.0480	.1103	.0496	.0927	.1465	.0681	.0941	.0815
43	Age sch. plant	GSC-33	.1659	.1586	.1537	.2029	.2150	.1057	.1871	.1499	.0386
44	Homogen. grping	GSC-39	.0325	.0141	.0305	.0517	.0731	-.0110	.0862	.0736	.0334
45	Salary f. teach.	GSC-57	-.3256	-.1463	-.2829	-.1418	-.4741	-.1732	-.5220	-.2559	-.1444
46	Teaching exp.	GSC-58	.0833	.0354	.1088	.1125	.1146	.2280	.0978	.2050	.2203
47	% juv. del.	GSC-69	.0528	.0617	.0433	.0223	.0543	.0791	.0411	.0251	.0301
48	% dropout (boys)	GSC-70	.0504	.0561	.0423	.0521	.0443	.0259	.0861	.0472	.0417
49	% college (boys)	GSC-72	.2167	.2517	.2299	.2354	.2322	.2747	.2211	.2380	.1975
50	Guidance prog.	GP-1	.0894	.0682	.0903	.0656	.0880	.0607	.0625	.0686	.0416
Multiple R			.8600	.8572	.8699	.8411	.8238	.8287	.8518	.8491	.8266

Table 9-4 continued

Beta Weights and Multiple R's for Selected School and Community Characteristics vs. Selected Project Talent Tests. (N = 206 schools)

Var.	Description	Code	R-270 12 Mech. Reas. 25	R-290 10 Abst. Reas. 26	R-290 12 Abst. Reas. 27	R-312 10 Math. II 28	R-311 12 Math. I 29	R-312 12 Math. II 30	R-333 12 Math. III 31	R-107 12M Phy. Sci.Info. 32	R-112 12M Mech. Info. 33
1	Population	SSA-1	-.2284	-.1265	-.2367	-.1225	-.2281	-.1859	-.0920	-.1760	-.1947
2	Yrs.Sch.Comp.	SSA-2	.0257	.0925	.0524	-.0027	.0802	.0819	.0403	.0307	.0243
3	% Unemployed	SSA-3	.0330	.0286	.0275	-.0264	.0180	.0084	-.0323	.0538	.0140
4	% Manufactur.	SSA-4	.1525	.0375	.0816	.0005	.0545	.0752	-.0126	.0385	.0089
5	Family income	SSA-5	.0616	.2710	.1808	.3949	.2281	.2081	.3107	.1967	.0893
6	Mi. to city	SSA-6	.1609	.0643	.1229	.0001	.0778	.1185	.1252	.1043	.0446
7	% Rural-farm	SSA-7	.0159	-.0008	.0950	.0567	.0536	.0600	-.0255	-.0653	-.1030
8	% Priv. schools	SSA-8	.0651	.1457	.1254	.0093	.1099	.0706	.0351	.1200	.1238
9	% Native born	SSA-9	.0089	-.0317	.0136	.0257	-.0410	.0194	.0991	.0171	-.0735
10	% Wh. collar	SSA-10	-.0022	-.1506	.0555	-.1744	-.0685	.0163	-.1163	-.0504	-.1036
11	% Own homes	SSA-11	.0190	.0112	.0280	-.0795	.0787	.0524	.0866	.0739	.1475
12	Size grade 12	GSC-59	.1540	.1381	.0991	.1372	.1001	.0735	.0419	.1026	.0827
13	Salary M teach.	GSC-56	.2526	.4231	.1812	.6235	.3043	.4087	.3657	.4196	.2521
14	$ Per pupil	GSC-89	.0257	-.0090	-.0537	-.0175	-.0110	.0438	.0943	.1087	.0529
15	Qual. housing	GSC-87	-.0947	-.1098	-.1852	-.0830	-.1261	-.1365	-.1122	-.1525	-.1672
34	Type school	GSC-1	.1496	.0855	.0572	.0605	.1033	.0456	.0138	.0683	.1163
35	Grades incl.	GSC-2	-.2144	-.0056	-.0810	-.0737	-.0389	-.0742	-.0093	-.0611	-.0711
36	Days per year	GSC-6	-.0117	-.0455	-.0212	-.0454	-.0573	-.0348	.0097	-.0509	-.1071
37	Size math sci.cl.	GSC-9	-.1762	-.1015	-.0601	-.0212	-.0324	.0052	.0590	.0007	-.0858
38	Size other class	GSC-10	.1553	-.0730	.0728	-.1457	-.0582	-.1380	-.1571	-.1206	-.0657
39	Homework	GSC-11	-.1041	-.0643	-.0584	-.0057	-.0435	-.0162	-.0200	.0088	-.0924
40	Study halls	GSC-12	.0436	.0521	.0442	.0366	.0169	.0181	-.0075	-.0051	.0275
41	Absenteeism	GSC-29	-.0383	-.0979	-.0545	-.1818	-.0948	-.0663	-.0316	-.1323	-.1807
42	Books in libry.	GSC-32	.0341	.0028	.0805	.0068	.0844	.0403	.0523	.0263	.1101
43	Age sch.plant	GSC-33	.1055	.1553	.0427	.1730	.1234	.1053	.0474	.1349	.1482
44	Homogen.grping	GSC-39	.0966	.0142	-.0378	.0334	-.0248	.0056	-.0524	.0073	.0545
45	Salary F teach.	GSC-57	-.1048	-.2886	-.0097	-.5415	-.2138	-.3464	-.2441	-.3926	-.1894
46	Teaching exp.	GSC-58	.0749	.1168	.2331	.0437	.2528	.2098	.1396	.0801	.1236
47	% Juv.delin.	GSC-69	.1720	.0212	.0220	.0357	-.0348	.0103	.0122	.0437	.0533
48	% Dropout (boys)	GSC-70	.1188	.0929	.0876	.0556	.0703	.1220	.0769	.0376	.0000
49	% College (boys)	GSC-72	.3516	.2049	.2348	.2152	.2170	.2802	.2823	.2438	.1481
50	Guidance prog.	GP-1	-.0143	.0299	-.0169	.0613	-.0167	-.0261	-.0382	.0620	.0879
Multiple R			.8529	.8133	.8348	.7709	.8242	.7970	.7695	.8251	.8504

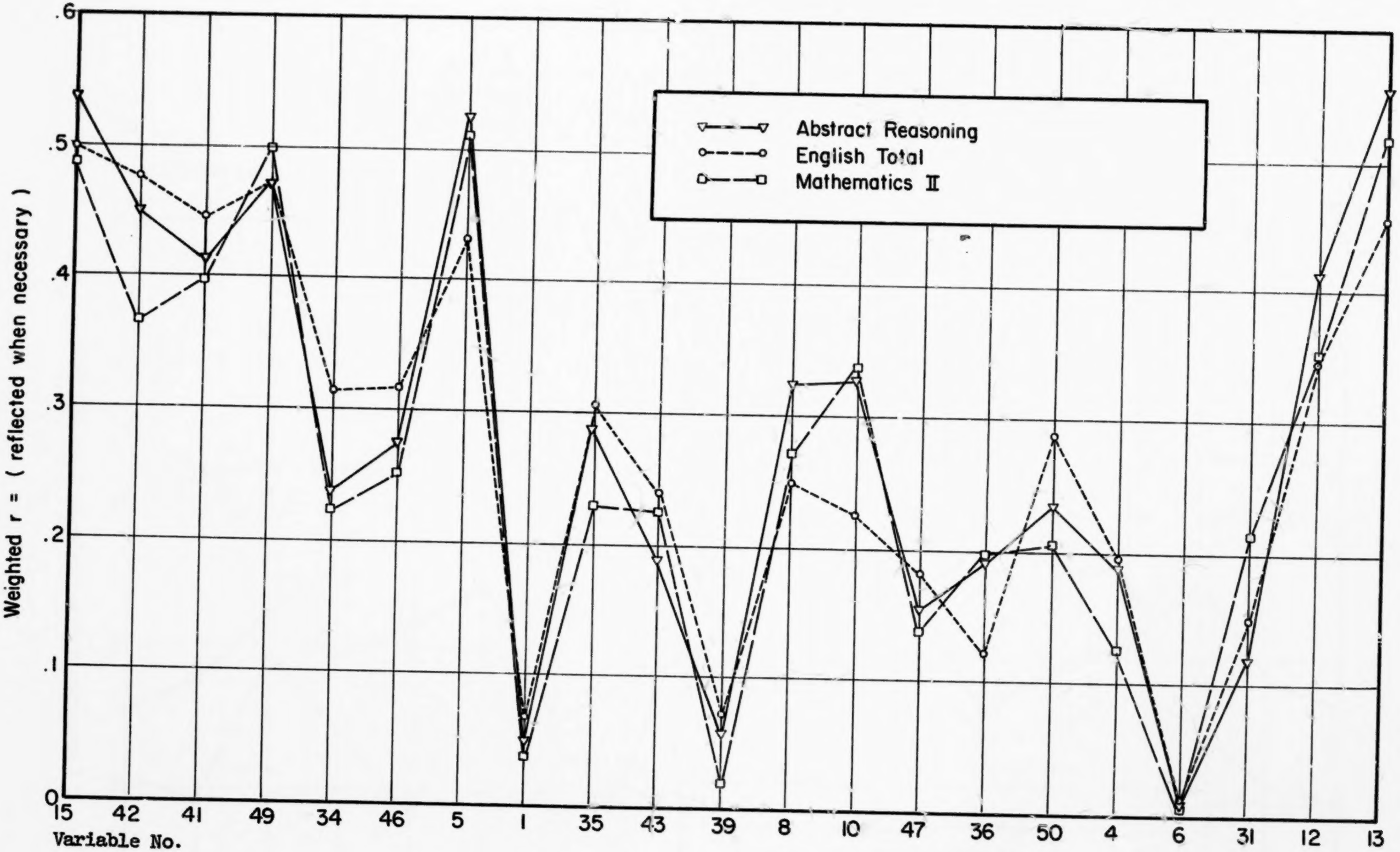


Figure 9-1. Zero-order correlations between Abstract Reasoning (R-290) test score means, Mathematics II (R-312) test score means, and English Total (R-230) test score means for Grade 12 versus selected school and community characteristics

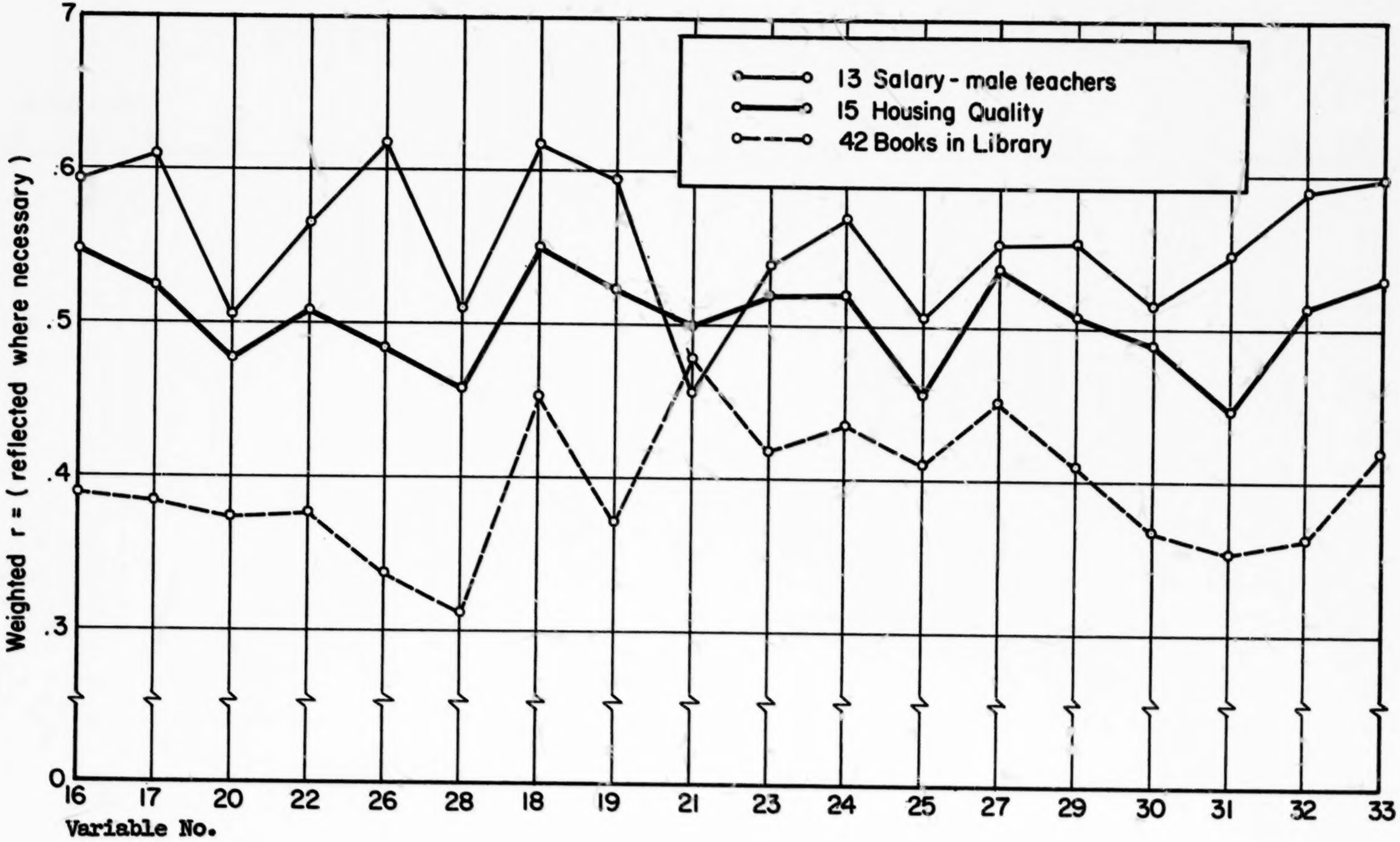


Figure 9-2. Correlations between Starting Salary for Male Teachers (GSC-56), Housing Quality (GSC-87), and Books in Library (GSC-32) versus all the tests in the matrix

unique predictive variable for predicting English Total--12th grade (R-230) means, whereas it is very important and unique for predicting means on some of the other tests. On the other hand, books in library peaked in its correlation with English Total--12th grade, and as a result turned out to have unusually high unique validity for predicting English Total--12th grade means. On the other hand, it has very little validity for predicting some other test means such as Mathematics II (R-312).

There is Much Overlap between Family Income and Teacher Salaries and Experience

Figure 9-3 shows results of regression analyses for school and community characteristics versus Abstract Reasoning (R-290) means at Grade 12. The top curve shows the multiple correlation for various combinations of variables versus Abstract Reasoning. The order of the variables at the bottom of the chart is that in which they were picked up by the multiple regression equation which in each step adds the variable not yet added that will contribute most to the multiple correlation. On the multiple R curve the first value, of course, is for the zero-order correlation of Variable 13 with the criterion test. The next is for the two-variable equation (Variables 13 and 15), the next for the three-variable equation (Variables 13, 15, and 46), etc. The other three curves show the Beta weights for starting salary--male teachers (GSC-56), housing quality (GSC-87), and teaching experience (GSC-58) as they change in each successive regression equation as each new variable is picked up. It can be seen that the regression weights change sharply as the first half-dozen or so tests are picked up, but thereafter they become quite stable.

In general, as additional variables are added to the equation, the Beta weight for each test tends to drop to the extent that the new variables take away unique valid variance that the original variable had because of overlap with the new variable being introduced. Once the equation has stabilized, the three variables seem to be of about equal importance in terms of predicting school mean scores on Abstract Reasoning. The high correlations of salary for male teachers and teaching experience of teachers with Abstract Reasoning is due in large part to the high correlation between starting salary of male teachers and experience and such population factors as mean family income for the community. It is very interesting to note the very sharp drop in the Beta weight for the starting salary of male teachers as Variable 5 (median family income) is introduced. This indicates that much of the zero-order correlation between teacher salaries and Abstract Reasoning school means is a result of the extensive relationship between teacher salaries and community average family income. However, a substantial relationship between teacher salaries and Abstract Reasoning remains even after family income is held constant.

What Accounts for School Differences in Abstract Reasoning?

Figure 9-4 presents additional multiple regression results for the school and community characteristics versus Abstract Reasoning at the 12th grade level. Here the curve for the multiple R is repeated. The lower four curves are for the Beta weight multiplied by the zero-order correlation of Variables

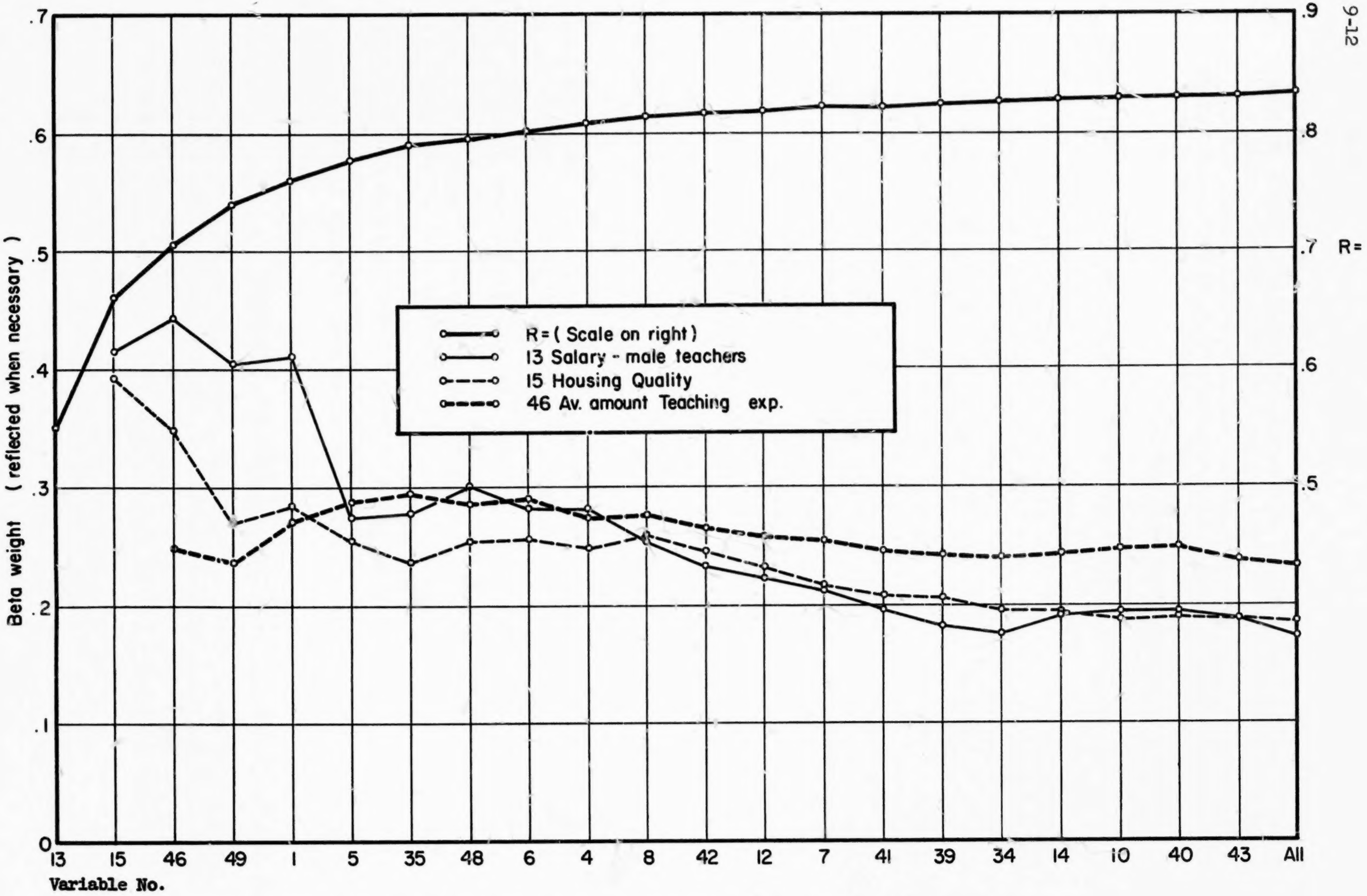


Figure 9-3. Multiple R and Beta Weights for Salary--Male (GSC-56), Housing Quality (GSC-87), and Teaching Experience (GSC-58), as each new variable is added in stepwise regression to predict Abstract Reasoning (R-290) for Grade 12 school test means

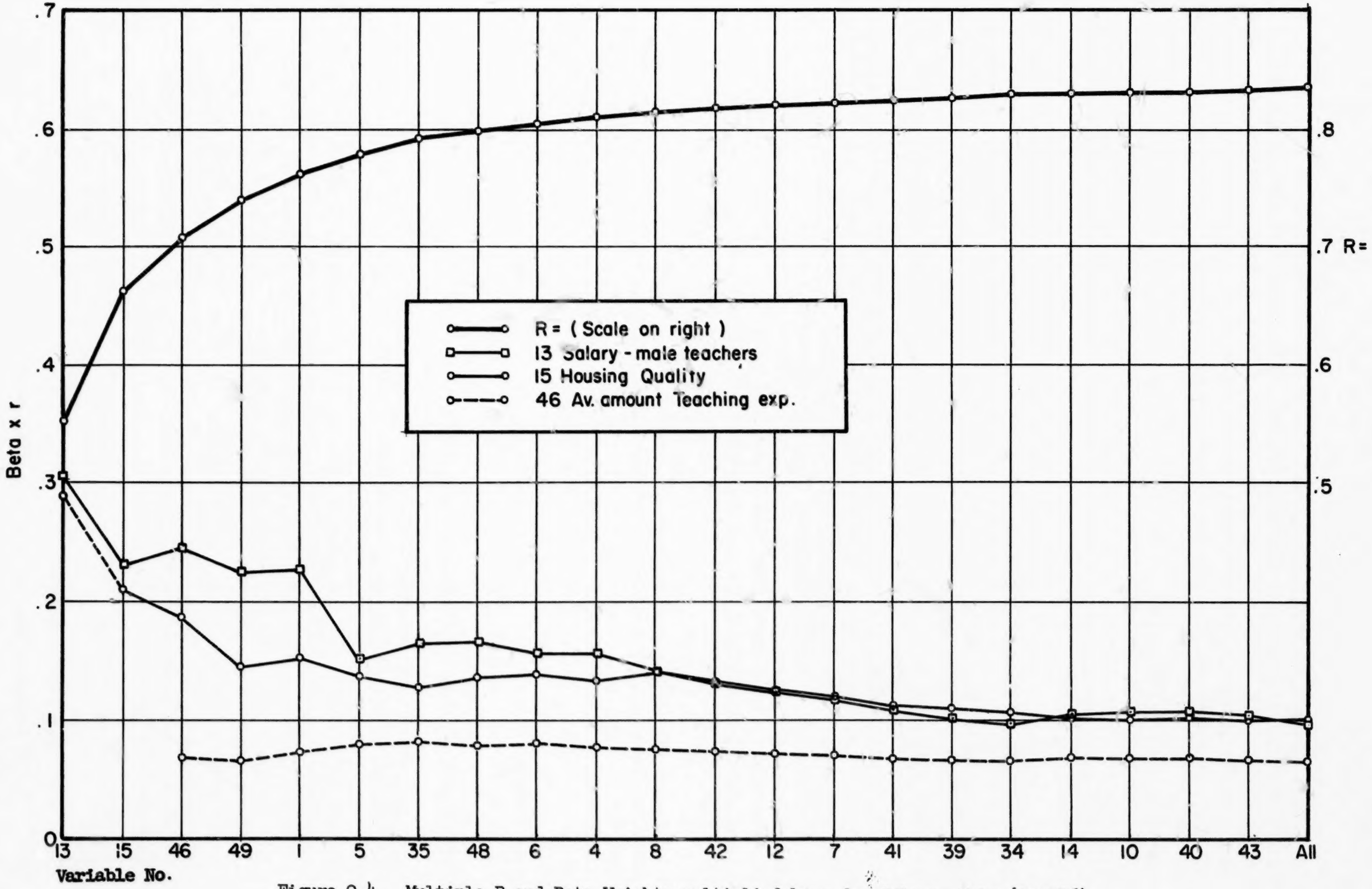


Figure 9-4. Multiple R and Beta Weights multiplied by r for Salary--Male (GSC-56), Housing Quality (GSC-87), Per Cent Boys to College (GSC-72), and Teaching Experience (GSC-58), as each new variable is added in stepwise regression to predict Abstract Reasoning (R-290) for Grade 12 school test means.

13, 15, 46, and 49 with Abstract Reasoning. This may be regarded as a measure of the proportion of the variance on the criterion test (Abstract Reasoning (R-290)) that each test accounts for uniquely in each successive combination of tests when these products are all positive, in which case their sum will be equal to R^2. It can be seen that Variable 13, starting salary for male teachers (GSC-56), accounts for nearly 31% of the variance on the criterion test when used alone. This drops sharply to about 23% when housing quality (GSC-87) is introduced, holds stable at about that level, and then drops to about 15% when median family income (SSA-5) is introduced. It then slowly declines as other variables are introduced and becomes about 10% in the final equation for all 32 variables.

The Reading Comprehension Test Behaves the Same as Abstract Reasoning

Figure 9-5 shows the multiple regression results using the Reading Comprehension Test (R-250) school means, 12th grade, as the criterion variable. The upper curve represents the multiple correlations for each successive school and community variable. They are listed at the bottom in the order in which they were pulled by the stepwise multiple regression program for this criterion test. The second curve shows the successive Beta weights for Variable 15, housing quality (GSC-87) in each new combination of tests. The lower curve shows the Beta weights for each test in the final regression equation in which all 32 variables are in regression. It is interesting to note here that the first six variables pulled for Reading Comprehension--12th grade and Abstract Reasoning--12th grade are identical, and the first four are in the exact order in both cases. This indicates that the 12th grade Reading Comprehension Test means for schools have very nearly the same relationship to school and community characteristics as does Abstract Reasoning. Since Abstract Reasoning is non-curriculum-linked and appears to be a result primarily of community and family influences rather than school influences, it would appear that Reading Comprehension may be much the same. Other data reported earlier have also indicated that, as compared with other tests such as English and mathematics, Reading Comprehension is largely associated with patterns of out-of-school influences rather than of in-school influences or at least of high school influences.

What Accounts for School Differences in English?

Figure 9-6 shows the relationship of the school and community characteristics to English Total achievement at Grade 12 level. Here the picture is quite different from that of Reading Comprehension. Starting salary for male teachers (GSC-56), which was the number one factor for Reading Comprehension, doesn't come out at all as a predictor for English achievement. Variable 42, number of books in the school library, turns out to be the number two variable, whereas it was also far down the list for the prediction of Reading Comprehension. Curves are shown for the Beta weights for Variable 15, housing quality (GSC-87), and Variable 42, books in the school library (GSC-32). The lower curve also shows the Beta weight multiplied by the zero-order correlation with English Total for Variable 15, housing quality, so as to show the proportion of variance contributed.

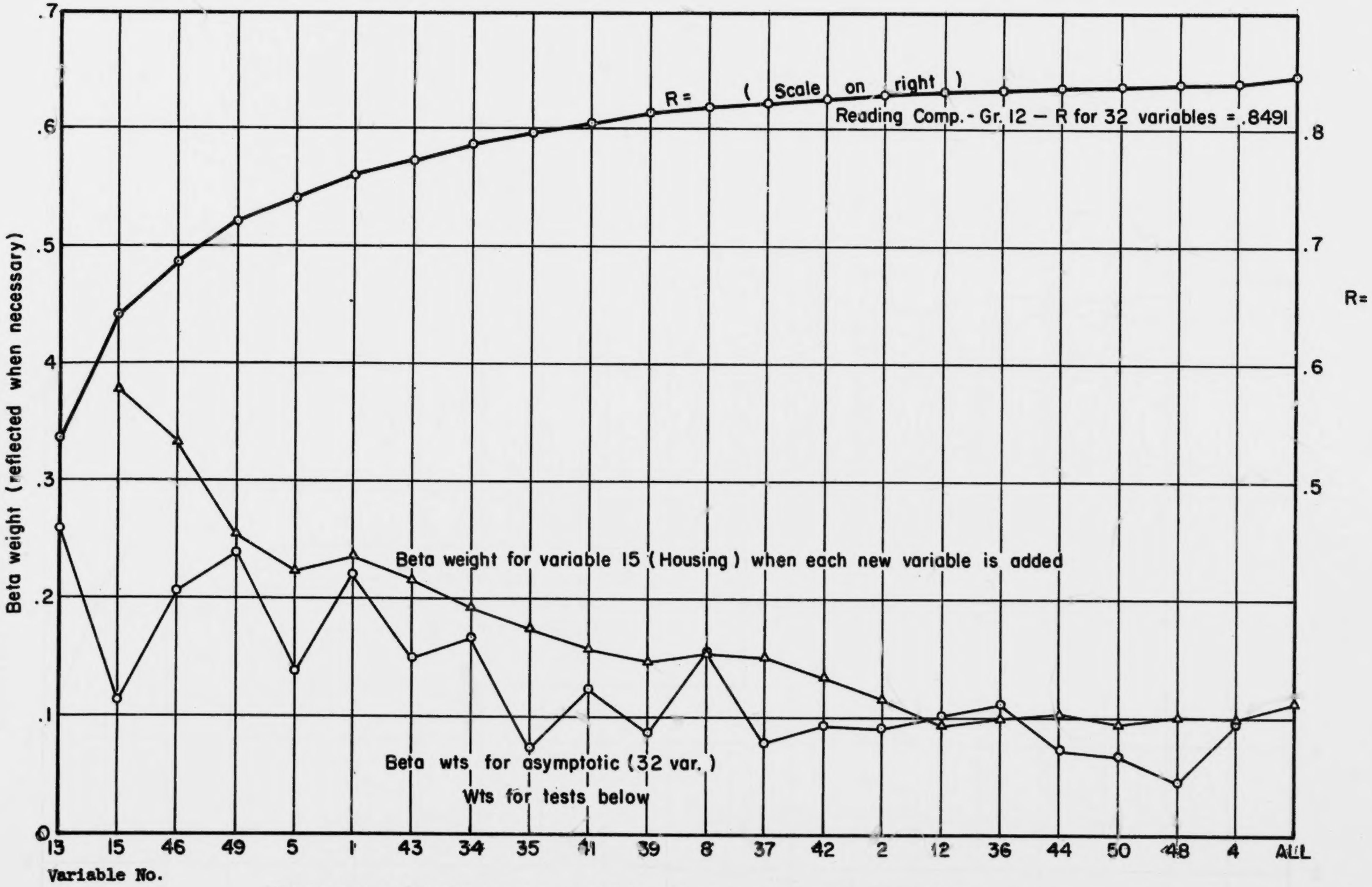


Figure 9-5. Multiple R and Beta Weights for Housing Quality (GSC-87) as each new variable is added in stepwise regression to predict Reading Comprehension (R-250) school test means. Also shown is the asymtotic Beta Weight for various school variables

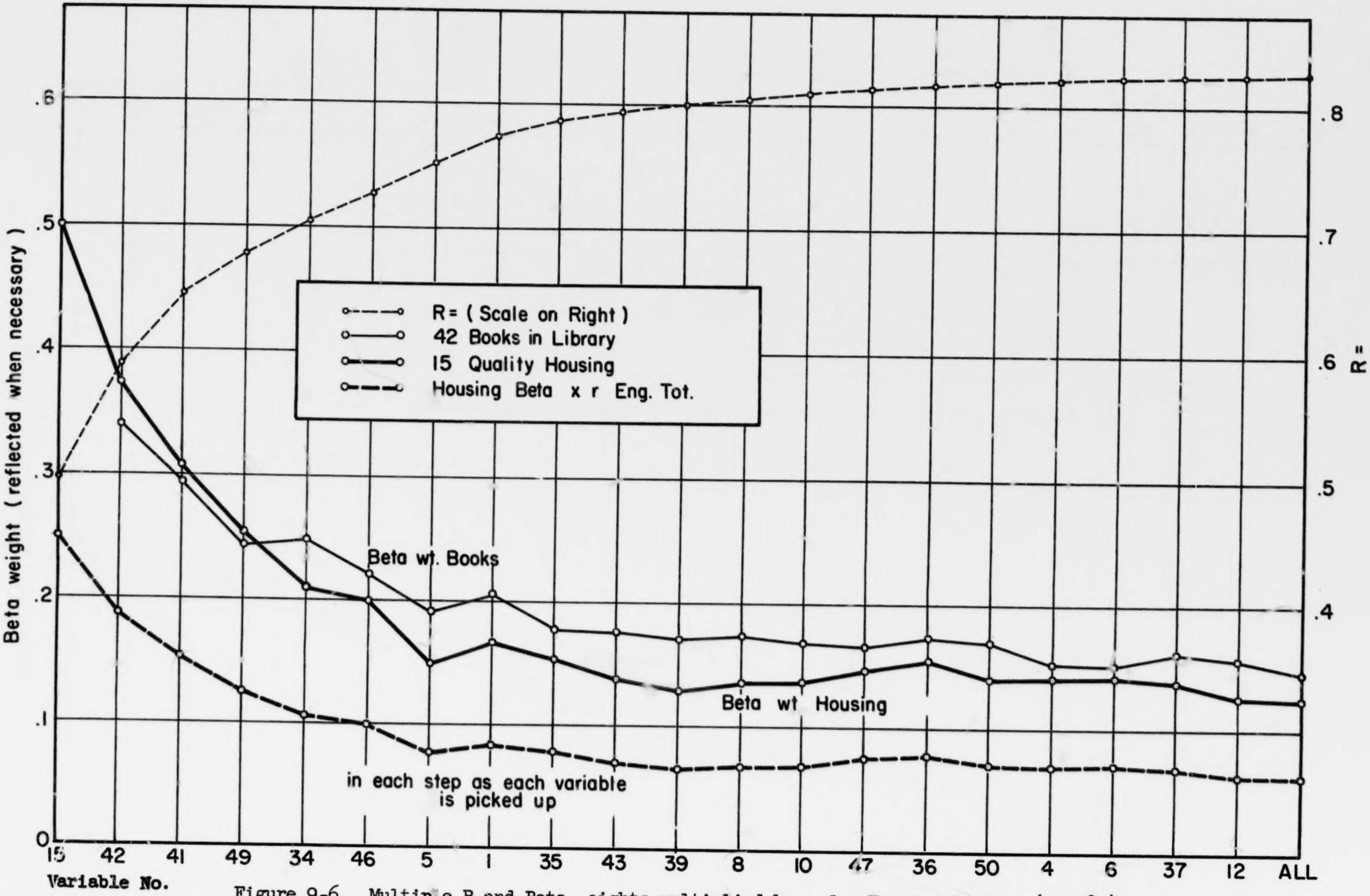


Figure 9-6. Multiple R and Beta Weights multiplied by r for Housing Quality (GSC-87), and the Beta Weights for Housing Quality (GSC-87) and Books in Library (GSC-32), as each new variable is added in stepwise regression to predict English Total (R-230) for Grade 12 school test means

What Accounts for School Differences in Mathematics?

Figure 9-7 shows the multiple correlation results for Intermediate Mathematics (R-312)--12th grade as a criterion variable. The curve at the top is for the multiple correlation,R, and the next curve shows the Beta weight for Variable 13, starting salary for male teachers (GSC-56). Here the Beta weight for starting salary of male teachers starts at a relatively high level, drops sharply when median family income (SSA-5) is introduced, declines slowly then, until Variable 45, starting salary for female teachers, (GSC-57) is introduced. When Variable 45 is introduced, the Beta weight for Variable 13 takes a very sharp rise. It was found that Variable 45 had a high negative Beta weight. As can be seen by the upper curve, however, this has virtually no visible effect on the multiple correlations. It also has virtually no effect on the Beta weights for any of the other variables. What has happened is that a nearly identical pair of variables has been introduced into regression. In order to capitalize on a very slight difference in criterion test correlation between the pair of tests, a very high positive weight is given to the one with the highest correlation and high negative weight given to the one with slightly less correlation. Such pairs of variables should not be included in the regression equations, although when they are they only affect their own Beta weights, and the Beta weights and the results for the other variables are not affected except to the extent that they actually lose unique criterion validity to one or the other of the pair of tests in the new regression equation.

Summary

It should be noted that such variables as class size in mathematics and science, per-pupil expenditures, and total number of Grade 12 students did not have any appreciable unique variance for predicting any of the school test means used in this analysis. In this analysis a large part of the variation among schools in mean scores on both aptitude and achievement tests is accounted for by a very few factors, such as family income, quality of housing, teacher salary level, teacher experience, and books in the library (for English). The remaining unaccounted-for variation must be split among hundreds of different school characteristics. This is one reason it is so hard to measure and isolate the unique association of a single school practice with a measurable school outcome. The chances are the real unique relationship of the practice accounts for only a fraction of one per cent of the total variation of the output measure being studied. Unless the few prime unique concomitants of performance as isolated in this study are measured and held constant, it is not possible to expect to isolate the unique relationships between school performance and most school practices. Even then the effects in question may be too small (though extant) for us to measure precisely.

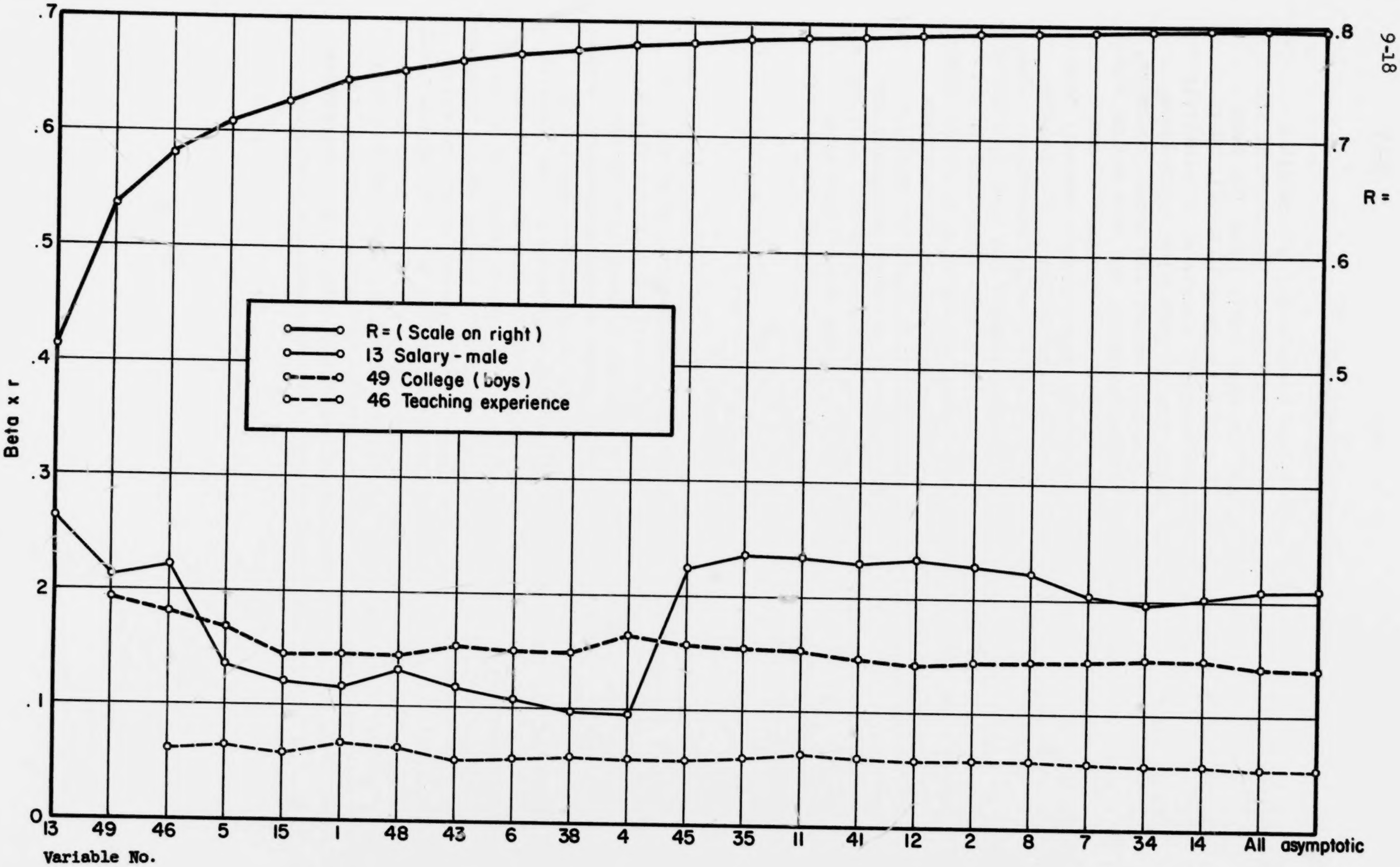


Figure 9-7. Multiple R and Beta Weights for Salary--Male (GSC-56) Per Cent Boys to College (GSC-72), and Teaching Experience (GSC-58), as each new variable is added in stepwise regression to predict Mathematics II (R-312) school test means

Matrix 1A - School Characteristics and Student Outcomes Intercorrelations for Three Combinations of Taxonomy Groups

The computation of intercorrelations, separately, for each taxonomy group graphically illustrates that quite different intercorrelational results will be obtained for the same set of variables for different types of high schools. However, since the whole group of schools had been fractionated into so many groups, and since some of these groups consisted of very few schools, multiple correlations were not computed on the basis of the schools in single taxonomy groups. Fortunately, it appeared that many of the taxonomy groups might be well combined for correlational purposes with other groups. It was decided to group all of the Cities A and Cities B public senior high schools together with all of the vocational high schools in one group that would consist of the large city schools. This is called Combination 1. All of the other groups were split into the Southeast states (U.S. Office of Education Region 5) as Combination 2, versus all other Regions as Combination 3. Various intercorrelations of the 50 variables in Matrix 1A for each of the three combinations of taxonomy groups are shown in Tables 9-5, 9-6, 9-7, and 9-8. Each table shows the 49 correlations for an important measure of school outcomes.

Combination 1 consists of all the schools in Taxonomy Groups 10, 21, 22, 31, and 32. Combination 2 consists of all the schools in Taxonomy Groups 51, 52, 53, and 54. Combination 3 consists of all the other taxonomy groups: 41, 42, 43, 44, 61, 62, 63, and 64.

Table 9-5 shows the correlations for each variable in Matrix 1A with the per cent of the boys who attend college (GSC-72). The correlations are shown separately for Combination 1--city schools, Combination 2--Southeast Region schools, and Combination 3--other Region schools. It can be seen that certain of the tests for Combination 1 have a very high degree of correlation with the college attendance rate. The highest correlation is Mathematics II (R-312), .81. The correlation is a great deal lower, although appreciable, for Combination 2 and Combination 3.

Table 9-6 shows the correlations for the three combinations of groups for the absentee rate (GSC-29) for each school. The correlations between some of the tests and absenteeism for the cities combination of groups run as high as -.63. There is also an appreciable correlation within the Southeast combination, but very little correlation for Combination 3--other Regions.

In Table 9-7 are shown the correlations for dropout rate for boys (GSC-70) for each of the three combinations of groups. Here the correlations are much lower than for absenteeism or college attendance rate. There seems to be little correlation for Combinations 2 and 3, and lower correlations for Combination 1, as compared with the other two criterion items. There seems a definite tendency for dropout rate to correlate substantially lower with test scores than does absenteeism.

Table 9-5

Correlation of Percent Boys Going to College (GSC-72) With Various School and Test Measures

Var. No.	Code	Test* or Item**	Comb. 1	Comb. 2	Comb. 3
1	R-190	Information Test--Total, Boys	.684	.378	.249
2	R-190	Information Test--Total, Girls	.646	.387	.231
3	R-230	English--Grade 10	.719	.329	.205
4	R-230	English--Grade 12	.717	.325	.261
5	R-311	Mathematics I	.600	.329	.226
6	R-312	Mathematics II	.807	.377	.315
7	R-340	Mathematics Total	.787	.381	.299
8	R-250	Reading Comprehension	.651	.352	.285
9	R-260	Creativity	.409	.347	.267
10	R-290	Abstract Reasoning	.502	.382	.268
11	R-107	Info: Physical Sciences, Boys	.625	.370	.205
12	R-112	Info: Mechanics, Boys	.213	.247	.223
13	GSC-1	% General Comprehensive	.325	-.001	-.147
14	GSC-2	% Grades 1 through 12	-.019	-.248	-.091
15	GSC-9	Class Size--Science & Math.	.239	.068	-.004
16	GSC-29	Absentee Rate	-.429	-.190	-.059
17	GSC-72	Dropout--Boys	-.285	-.046	-.044
18					
19	GSC-75	% to Junior College	.210	.202	.179
20	GSC-77	% Remedial Reading	-.080	.113	.105
21	GSC-87	% Low Cost Housing	-.296	-.276	-.217
22	GSC-89	Total Per Pupil Expenditure	-.288	.087	.169
23	GSC-101	Principal--Years Experience	.209	.048	.038
24	GSC-59	Senior Class Size	.416	.372	.250
25	GSC-3	Accreditation	.306	.035	-.064
26	GSC-4	Midyear Admission Grade 1	-.014	.054	-.071
27	GSC-5	Midyear Promotion	.133	.162	-.040
28	GSC-6	Days in School Year	.-79	-.066	.145
29	GSC-7	Class Periods Per Day	-.215	-.088	-.014
30	GSC-57	Starting Salary, Female	.308	.146	.160
31	GSC-10	Class Size, Other	.214	.124	-.041
32	GSC-11	Homework Expected	.419	.167	.188
33	GSC-12	Study Halls	-.305	.105	.133
34	GSC-15-7	Accelerated Curriculum	-.249	-.160	-.161
35	GSC-16	Advanced Placement	.294	.034	.092
36	GSC-32	No. Books in Library	.185	.397	.167
37	GSC-33	Age of Building	-.096	.070	-.041
38	GSC-34	Last Renovation	.062	.049	.018
39	GSC-39	Homogeneous Grouping	-.270	-.221	-.067
40	GSC-40	Tracks	-.029	-.106	-.021
41	GSC-41	Acceleration Policy	-.242	-.182	-.100
42	GSC-56	Salary, starting, Male	-.082	.167	.137
43	GSC-58	Experience of Teachers	.223	.177	.011
44	GSC-69	Juvenile Delinquency	-.438	.153	.096
45	GSC-76	Remedial Mathematics	-.014	-.004	.142
46	GSC-81	Summer--New Work	-.333	-.235	-.171
47	GSC-82	Double Schedule	.198	-.005	.314
48	GSC-84	PTA	.468	.077	.067
49	GSC-86	Age of Housing	.493	.138	.060
50	GP-1	Guidance Program	.019	.072	-.008

*Test results for grade 12 boys and girls combined unless otherwise indicated

**From General School Characteristics Questionnaire (GSC) or Guidance Program Questionnaire (GP)

Table 9-6

Correlation of Per Cent Absenteeism (GSC-29) With Various School and Test Measures

Var. No.	Code	Test* or Item**	Comb. 1	Comb. 2	Comb. 3
1	R-190	Information Test--Total, Boys	-.497	-.396	-.051
2	R-190	Information Test--Total, Girls	-.509	-.411	-.079
3	R-230	English--Grade 10	-.632	-.454	-.083
4	R-230	English-Grade 12	-.452	-.372	-.112
5	R-311	Mathematics I	-.468	-.340	-.136
6	R-312	Mathematics II	-.495	-.324	-.089
7	R-340	Mathematics Total	-.485	-.343	-.103
8	R-250	Reading Comprehension	-.429	-.347	-.060
9	R-260	Creativity	-.415	-.375	-.133
10	R-290	Abstract Reasoning	-.431	-.342	-.153
11	R-107	Info: Physical Sciences, Boys	-.446	-.378	-.015
12	R-112	Info: Mechanics, Boys	-.450	-.413	-.087
13	GSC-1	% General Comprehensive	-.128	-.005	.103
14	GSC-2	% Grades 1 through 12	-.159	.019	-.195
15	GSC-9	Class Size--Science & Math.	.072	.243	.206
16					
17	GSC-70	Dropout--Boys	.446	.070	.187
18	GSC-72	% to College--Boys	-.429	-.190	-.059
19	GSC-75	% to Junior College	-.123	-.112	.051
20	GSC-77	% Remedial Reading	.195	.018	.028
21	GSC-87	% Low Cost Housing	.369	.097	.025
22	GSC-89	Total Per Pupil Expenditure	.146	-.089	-.100
23	GSC-101	Principal--Years Experience	-.124	.018	-.064
24	GSC-59	Senior Class Size	.051	-.007	.126
25	GSC-3	Accreditation	-.099	-.130	-.008
26	GSC-4	Midyear Admission Grade 1	-.071	-.118	-.011
27	GSC-5	Midyear Promotion	.129	-.023	-.063
28	GSC-6	Days in School Year	.003	.091	-.017
29	GSC-7	Class Periods Per Day	.159	-.021	-.064
30	GSC-57	Starting Salary, Female	-.115	-.155	-.043
31	GSC-10	Class Size, Other	-.011	.175	.207
32	GSC-11	Homework Expected	.146	-.003	..007
33	GSC-12	Study Halls	.232	-.076	-.010
34	GSC-15-7	Accelerated Curriculum	.167	.033	-.049
35	GSC-16	Advanced Placement	-.012	-.014	.027
36	GSC-32	No. Books in Library	.066	-.113	.109
37	GSC-33	Age of Building	.142	-.256	-.110
38	GSC-34	Last Renovation	-.129	.118	.018
39	GSC-39	Homogeneous Grouping	.018	.069	-.072
40	GSC-40	Tracks	-.130	.083	-.084
41	GSC-41	Acceleration Policy	.083	-.002	.003
42	GSC-56	Salary, Starting, Male	.089	-.121	-.042
43	GSC-58	Experience of Teachers	-.258	-.226	-.033
44	GSC-69	Juvenile Delinquency	.146	.058	.105
45	GSC-76	Remedial Mathematics	.226	.021	.050
46	GSC-81	Summer--New Work	.154	.103	-.020
47	GSC-82	Double Schedule	.011	-.031	.068
48	GSC-84	PTA	-.414	-.187	-.104
49	GSC-86	Age of Housing	-.246	-.070	.084
50	GP-1	Guidance Program	.159	.021	.062

*Test results for grade 12 boys and girls combined unless otherwise indicated

**From General School Characteristics Questionnaire (GSC) or Guidance Program Questionnaire (GP)

Table 9-7

Correlation of Per Cent Dropout Boys (GSC-70) With Various School and Test Measures

Var. No.	Code	Test* or Item**	Comb. 1	Comb. 2	Comb. 3
1	R-190	Information Test--Total, Boys	-.265	-.111	.021
2	R-190	Information Test--Total, Girls	-.276	-.006	-.061
3	R-230	English--Grade 10	-.420	.027	-.050
4	R-230	English--Grade 12	-.352	-.041	.007
5	R-311	Mathematics I	-.316	-.062	-.045
6	R-312	Mathematics II	-.293	-.014	-.045
7	R-340	Mathematics Total	-.317	-.044	-.051
8	R-250	Reading Comprehension	-.215	-.059	.029
9	R-260	Creativity	-.161	-.096	-.026
10	R-290	Abstract Reasoning	-.201	-.008	-.035
11	R-107	Info: Physical Sciences, Boys	-.176	-.113	.016
12	R-112	Info: Mechanics, Boys	-.190	-.096	-.029
13	GSC-1	% General Comprensive School	-.064	.041	.054
14	GSC-2	% Grades 1 through 12	-.148	.006	-.082
15	GSC-9	Class Size--Science & Math	-.044	.090	.151
16	GSC-29	Absentee Rate	.446	.070	.187
17					
18	GSC-72	% to College--Boys	-.285	-.046	-.044
19	GSC-75	% to Junior College	.062	-.001	-.067
20	GSC-77	% Remedial Reading	.290	-.092	.098
21	GSC-87	% Low Cost Housing	.120	.086	.045
22	GSC-89	Total Per Pupil Expenditure	.185	-.096	-.096
23	GSC-101	Principal--Years Experience	-.134	.061	.043
24	GSC-59	Senior Class Size	.165	-.042	.131
25	GSC-3	Accreditation	-.065	.022	.001
26	GSC-4	Midyear Admission Grade 1	-.023	-.006	.097
27	GSC-5	Midyear Promotion	.203	.046	-.011
28	GSC-6	Days in School Year	.022	.052	.006
29	GSC-7	Class Periods Per Day	-.008	.006	-.008
30	GSC-57	Starting Salary, Female	-.122	-.099	-.006
31	GSC-10	Class Size, Other	-.092	-.033	.140
32	GSC-11	Homework Expected	.255	-.005	.048
33	GSC-12	Study Halls	-.055	.024	.092
34	GSC-15-7	Accelerated Curriculum	-.087	-.046	-.052
35	GSC-16	Advanced Placement	-.118	-.028	.017
36	GSC-32	No. Books in Library	-.086	-.067	.048
37	GSC-33	Age of Building	-.017	.018	-.026
38	GSC-34	Last Renovation	.102	-.095	.065
39	GSC-39	Homogeneous Grouping	.015	-.058	-.160
40	GSC-40	Tracks	-.202	.151	-.129
41	GSC-41	Acceleration Policy	-.095	-.004	-.047
42	GSC-42	Salary, Starting, Male	.181	-.133	-.016
43	GSC-58	Experience of Teachers	.019	-.141	.060
44	GSC-69	Juvenile Delinquency	.216	.206	.195
45	GSC-76	Remedial Mathematics	.302	-.063	.134
46	GSC-81	Summer--New Work	-.007	.144	-.052
47	GSC-82	Double Schedule	-.100	.018	.085
48	GSC-84	PTA	-.330	.045	-.175
49	GSC-86	Age of Housing	-.273	.026	.014
50	GP-1	Guidance Program	.148	-.153	-.055

*Test results for grade 12 boys and girls combined unless otherwise indicated

**From General School Characteristics Questionnaire (GSC) or Guidance Program Questionnaire (GP)

In Table 9-8 are shown the correlations against the item on per cent of the students that appear in juvenile court each year (GSC-69). Since most of the schools outside Cities A and B do not have juvenile courts, this particular criterion is not regarded as interpretable for combinations 2 and 3. However, for the Cities combination, a number of the school factors as well as the test factors correlate appreciably with delinquency rate.

Stepwise Multiple Regression Studies of Three Combinations of Schools

In order to understand the real unique relationships between student outcomes and school characteristics, it is also essential that we examine the same relationships for various types of outcomes to see to what extent the patterns are the same. For example, to what extent do the unique correlates of Mathematics achievement differ from those of the non-verbal Abstract Reasoning Test or Reading Comprehension or English achievement? To find this out, stepwise multiple regression analyses have been carried out for three combinations of groups of schools described previously.

The stepwise regression analysis as carried out by the IBM 7070 computer with the Lotto (1962) program, computes multiple correlation coefficients for successive combinations of tests or other variables versus a criterion variable. The program at each step selects the variable that will add most to the multiple correlation when added to the ones previously selected. It first selects the one best test, and then selects the test that will add most to the first test. It then selects the third test that will add most to the first two, and the fourth that will add most to the first three, and so on. It ceases to pick up variables when no remaining test will increase the multiple R enough to be significant at the one per cent level. At each step the F ratio for each variable is re-computed. If adding another variable to those already selected reduces the F ratio for a previously selected variable to below the one per cent significance level, then the variable will be discarded and everything re-computed without it. When a variable is deleted the R will be temporarily lower.

1. Large City and Vocational High Schools

Table 9-9 shows the results of the stepwise multiple regression analyses for Combination 1, large city and vocational public high schools, for selected school test means versus the 33 school characteristics described in Table 9-5. The scale at the left of the table shows the value of the multiple R for each combination of school characteristics. The R represents the correlation between the criterion test and a combination of other variables so weighed as to maximize the value of the correlation. In each column the variable at the bottom represents the single test with the greatest correlation. The position of the variable indicates the value of the multiple R for it plus the variables selected earlier and which are below it in that column. The variable at the top of the column is the last one to be selected. For English Total, the best single school characteristic is Variable 48 -- Per cent of Parents in PTA. The correlation is .53. The second best variable is 33-- Having Study Halls. The R for this pair of variables is .61. The

Table 9-8

Correlation of Per Cent Juvenile Delinquency (GSC-69) With Various School and Test Measures

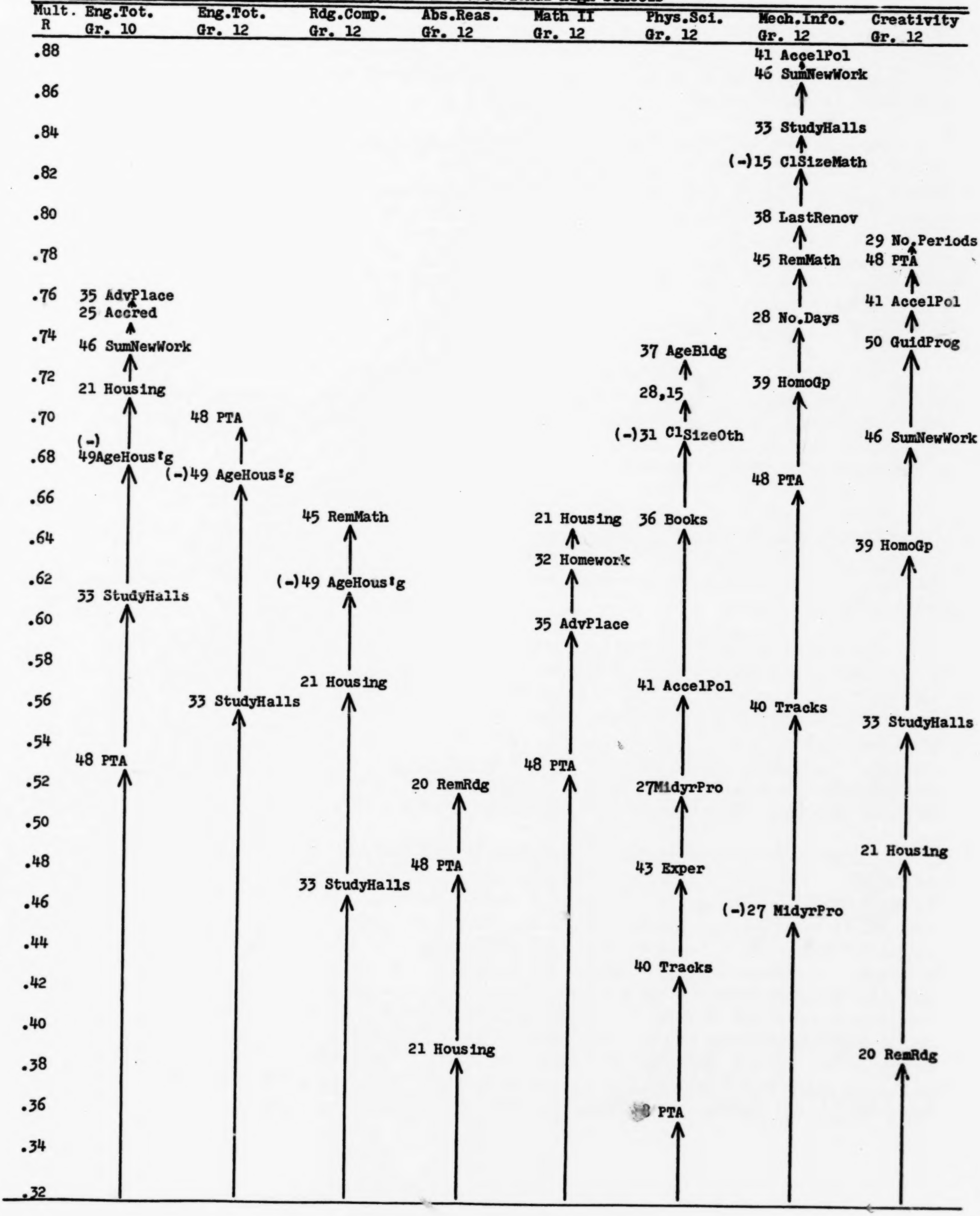
Var. No.	Code	Test* or Item**	Comb. 1	Comb. 2	Comb. 3
1	R-190	Information Test--Total, Boys	-.189	.068	.070
2	R-190	Information Test--Total, Girls	-.283	.035	.006
3	R-230	English--Grade 10	-.342	.110	.058
4	R-230	English--Grade 12	-.305	.076	.064
5	R-311	Mathematics I	-.147	-.017	.030
6	R-312	Mathematics II	-.364	.049	.024
7	R-340	Mathematics Total	-.319	.029	.033
8	R-250	Reading Comprehension	-.110	.088	.105
9	R-260	Creativity	.049	.035	.077
10	R-290	Abstract Reasoning	-.080	.077	.132
11	R-107	Info: Physical Sciences, Boys	-.090	.032	.066
12	R-112	Info: Mechanics, Boys	.040	.037	.083
13	GSC-1	% General Comprehensive	-.240	-.116	-.064
14	GSC-2	% Grades 1 through 12	-.171	-.336	-.128
15	GSC-9	Class Size--Science & Math	-.216	.103	.172
16	GSC-29	Absentee Rate	.146	.058	.105
17	GSC-70	Dropout--Boys	.216	.206	.195
18	GSC-72	% to College--Boys	-.438	.153	.096
19	GSC-75	% to Junior College	-.121	-.113	.162
20	GSC-77	% Remedial Reading	.084	-.056	.129
21	GSC-87	% Low Cost Housing	.255	-.088	.097
22	GSC-89	Total Per Pupil Expenditure	.200	.100	-.006
23	GSC-101	Principal--Years Experience	.005	.038	-.010
24	GSC-59	Senior Class Size	-.288	.295	.179
25	GSC-3	Accreditation	-.514	.084	-.037
26	GSC-4	Midyear Admission Grade 1	.046	-.045	-.017
27	GSC-5	Midyear Promotion	-.030	.042	-.052
28	GSC-6	Days in School Year	.068	.005	-.032
29	GSC-7	Class Periods Per Day	-.142	-.079	-.045
30	GSC-57	Starting Salary, Female	-.292	.180	.145
31	GSC-10	Class Size, Other	-.247	.101	.068
32	GSC-11	Homework Expected	-.345	-.088	.063
33	GSC-12	Study Halls	.176	.086	.159
34	GSC-15-7	Accelerated Curriculum	.025	-.107	-.101
35	GSC-16	Advanced Placement	-.116	-.068	.043
36	GSC-32	No. Books in Library	.091	.251	.081
37	GSC-33	Age of Building	-.124	-.029	.081
38	GSC-34	Last Renovation	-.109	.054	-.051
39	GSC-39	Homogeneous Grouping	.339	-.087	-.078
40	GSC-40	Tracks	.014	.053	-.125
41	GSC-41	Acceleration Policy	-.062	-.197	-.093
42	GSC-57	Salary, Starting, Male	.099	.131	.156
43	GSC-58	Experience of Teachers	-.354	.117	-.027
44					
45	GSC-76	Remedial Mathematics	-.069	-.021	.197
46	GSC-81	Summer--New Work	.239	-.126	-.043
47	GSC-82	Double Schedule	-.103	.201	.089
48	GSC-84	PTA	-.331	-.078	-.120
49	GSC-86	Age of Housing	-.242	.001	.039
50	GP-1	Guidance Program	.171	.030	.008

*Test results for grade 12 boys and girls combined unless otherwise indicated

**From General School Characteristics Questionnaire (GSC) or Guidance Program Questionnaire (GP)

Table 9-9

Stepwise Multiple Regression for School Test Means (from Matrix 1-A)
versus School Characteristics (from Matrix 1-A) -- 142 Schools, Weights B
Cities A & B + Vocational High Schools



third variable to be picked up is (-)49--Age of Housing. The minus sign before the variable number signifies that the relationship is negative--that is, newer housing goes with better achievement. Where no sign precedes the variable number the relationship is positive. The variables failing to appear in a given column do not add significantly to predicting the test in that column.

It can be seen that English achievement for Grade 12 is not as predictable as it is for Grade 10. However, the R for study halls, age of housing, and PTA is .71, and these three variables were also the first three picked for Grade 10 English achievement. Reading Comprehension--Grade 12 has an R of .65 for four variables, two of which are also among the three best variables for predicting English achievement for Grade 12. It seems indicated that Reading Comprehension and English achievement at the Grade 12 level have similar but by no means identical patterns of unique relationships with school characteristics.

The Grade 12 Abstract Reasoning mean has a multiple R of .52. Only three variables were picked. This is relatively low as compared with the other tests and indicates that for these schools English achievement is certainly not just a function of how well the students can perform on a non-language reasoning test.

Results are also shown for Mathematics, Physical Science Information, Creativity, and Mechanics Information. Eleven school factors give a combined R of .88 for Mechanics Information. These factors are mainly the factors that differentiate vocational high schools from the comprehensive high schools.

The whole pattern of interrelationships between test and school characteristics for this group of schools seems very puzzling at first glance. The picture is clarified when interpreted in the light of information from other analyses, which indicates that vocational high schools markedly underperform in English as compared with their Mechanics Information Test mean scores. Thus the school characteristics which are most predictive of test performance in English are those in which the vocational high schools show up most poorly. This explains why PTA membership correlates so highly.

Correlations between English Total (R-230) Grade 12 mean score with selected tests for the three combinations of schools are shown graphically in Figure 9-8. The correlations for Combination 3 (Northeast, Midwest, and West) tend to run lower in general than do those for the other two combinations. This is because there are many very small schools in Combination 3. This tends to lower all correlations since mean scores in smaller schools have lower reliabilities. The correlation profiles for Combinations 2 and 3 tend to be closely congruent but Combination 1 is quite different from them. The profile correlation coefficients for Mathematics II and Physical Science Information are much higher for Combination 1 than for Combination 3, while for Mathematics I (Arithmetic Reasoning) and Mechanics Information the differences are in the other

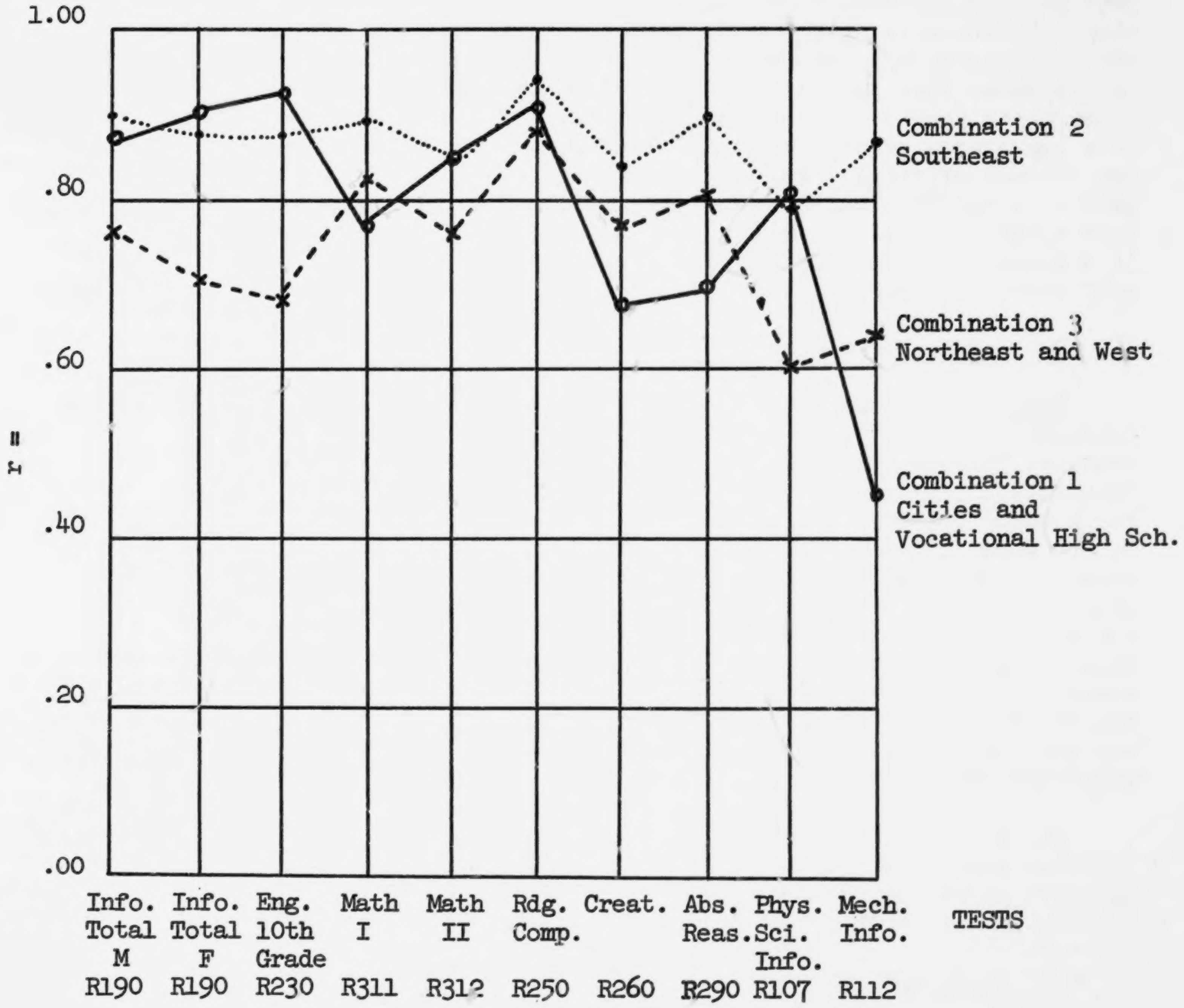


Figure 9-8. English Total (R-230) Grade 12 Mean Score Correlations with Various Tests for Three Combinations of Groups of Schools

direction. The differences in correlations seem to reflect differences in exposure rates in the areas measured. In the vocational schools the students have minimum exposure to verbal experiences, while the students in the large city comprehensive high schools have the advantage that more mathematics and science courses are available than in the small schools in Combinations 2 and 3. It seems that the correlations for English achievement--Grade 12 versus other tests tend to be lower whenever there is extensive variation in exposure to a given area of achievement. Where many schools have limited mathematics and science offerings, English achievement has lower correlations with Mathematics II and Physical Sciences Information than with Mathematics I (Arithmetic Reasoning) and Abstract Reasoning. A really marked lower correlation occurs in Combination 1 for English versus Mechanical Information where very large differences in exposure rate exist for both language and mechanical experiences.

2. Southeastern High Schools

Table 9-10 shows results for high schools in Combination 2, which is the Southeast Region (Virginia, West Virginia, North Carolina, South Carolina, Georgia, Florida, Alabama, Mississippi, Louisiana, Arkansas, Kentucky, and Tennessee). For English achievement--Grade 10 there is a multiple R of .66 for housing quality, age of school building, size of school library, permission of new work in summer school, plus class size in other than mathematics and science. Exactly the same five factors are selected in slightly different order and give a combined R of .63 for Grade 12 English. The same five factors are also selected for Reading Comprehension. For these, also, R = .63. For these schools it would appear that the same factors that best predict English achievement also best predict Reading Comprehension and to the same extent. The R's for Physical Sciences Information, Mechanics Information, and Creativity are far lower for these schools than for Combination 1, the large city plus vocational high schools.

It is interesting to note that the age of the school building has substantial positive predictive value in the Southeast--the older the building the higher the test scores tend to be. This is because the slum schools and isolated rural schools in that area tend to be newer than the more favored schools.

3. Northeast, Midwest, and West High Schools

Table 9-11 shows results for Combination 3, all of the remaining schools other than large city, vocational, or Southeast. The R's for English, Reading Comprehension, Abstract Reasoning, Mathematics, and Mechanics Information are much lower than for either of the other two groups. Among the most important factors seem to be teachers' starting salary, books in library, housing quality, number of study halls, amount of homework expected, and per-pupil expenditure.

Predictors of College Attendance--Boys

Table 9-12 shows the results of the stepwise multiple regression analysis for predicting college attendance for boys (GSC-72) as successive predictors are added. Because the college attendance rates for boys and girls are highly

Table 9-10

Stepwise Multiple Regression for School Test Means (from Matrix 1-A)
versus School Characteristics (from Matrix 1-A) -- 207 Schools, Weights B
Southeast Taxonomy Groups 51-54

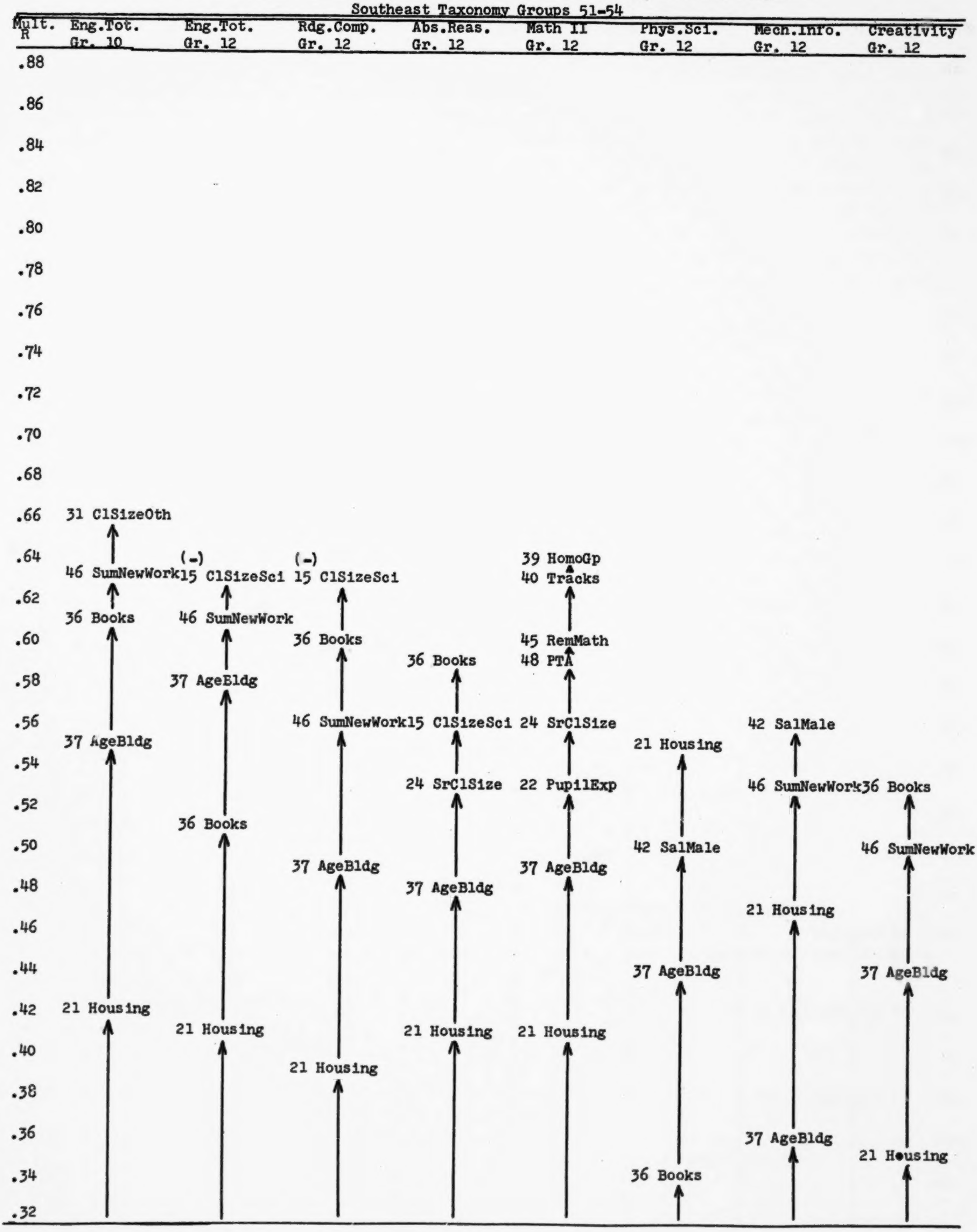


Table 9-11

Stepwise Multiple Regression for School Test Means (from Matrix 1-A)
versus School Characteristics (from Matrix 1-A) -- 461 Schools, Weights B
Northeastern, Midwest, and Western Taxonomy Groups 41-44, 61-64

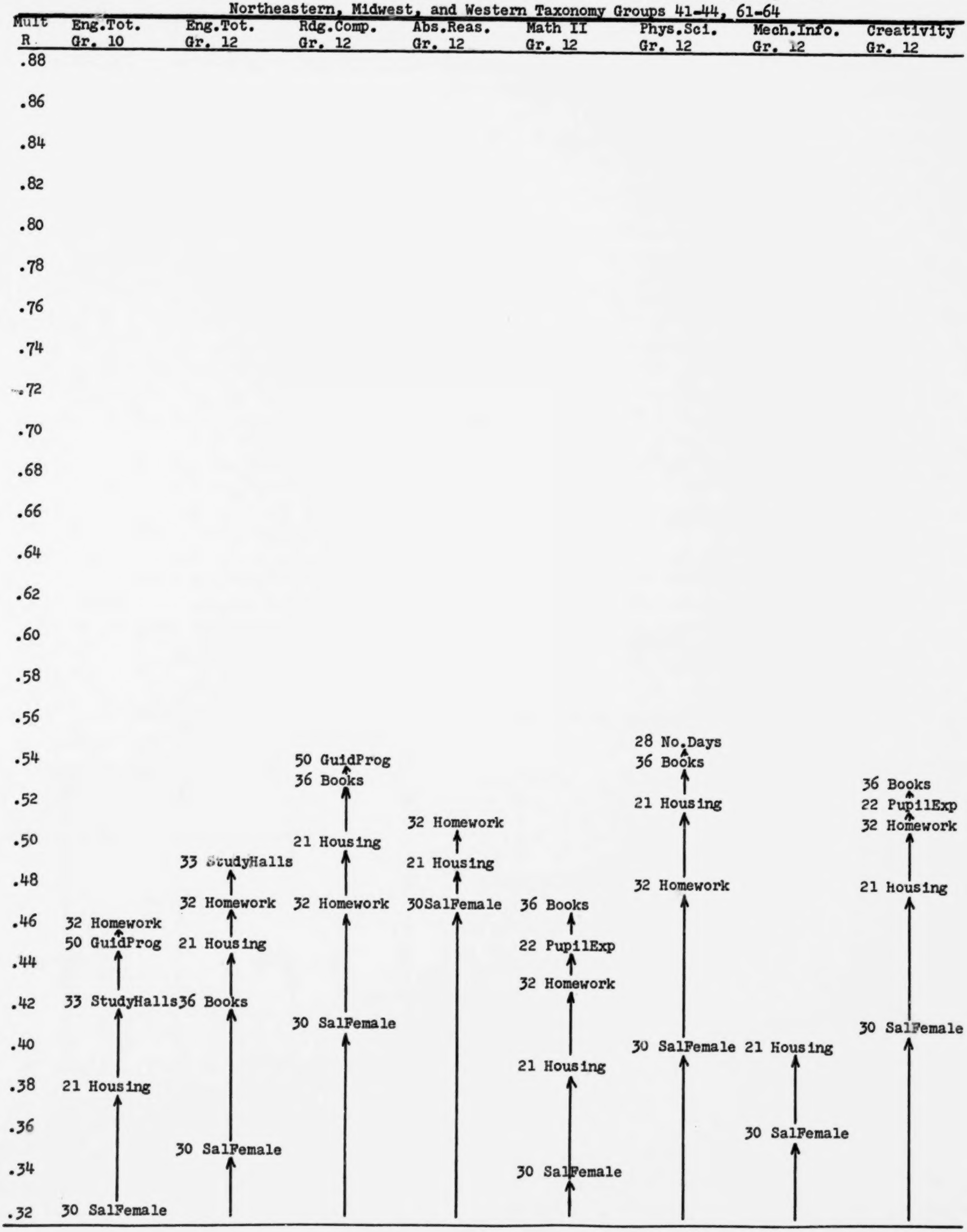


Table 9-12

Multiple Correlation Coefficients for Predicting College Attendance for Boys (GSC-72) as Successive Predictors are Added (Matrix 1A)

Variable	Description	Code	R
Combination 1 - Schools in Cities "A" and "B" and Vocational Schools			
6	Math II Test Score	R-312	.8071
49	Age of housing	GSC-86	.8342
9	(-) Creativity Test Score	R-260	.8581
1	Information Total Test Score--Boys	R-190	.8803
23	Years as Principal	GSC-101	.8884
19	Per cent junior college	GSC-75	.8958
37	Age of building	GSC-33	.9013
38	Last renovation	GSC-34	.9067
39	Homogeneous grouping	GSC-39	.9109
35	Advanced placement	GSC-16	.9161
32	Homework expected	GSC-11	.9201
2	Information Total Test Score--Girls	R-190	.9291
38*	Last renovation	GSC-34	.9288
6*	Math II Test Score	R-312	.9270
Combination 2 - Schools in Southeast			
36	Number of books in Library	GSC-32	.3969
2	Information Total Test Score--Girls	R-190	.4864
12	Mechanics Information Test Score--Boys	R-112	.5297
1	Information Total Test Score--Boys	R-190	.5750
27	Midyear promotion	GSC-5	.6008
19	Per cent junior college	GSC-75	.6240
28	Number of days in school year	GSC-6	.6387
49	Age of housing	GSC-86	.6508
10	Abstract Reasoning Text Score	R-290	.6637
2*	Information Total Test Score--Girls	R-190	.6595
4	English Total Test Score--12th Grade	R-230	.6690
49*	Age of housing	GSC-86	.6617
2	Information Total Test Score--Girls	R-190	.6723
Combination 3 - Schools in Northeast and West			
6	Math II Test Score	R-312	.3153
47	Double schedule	GSC-82	.4321
19	Per cent junior college	GSC-75	.4749
21	Housing quality--Low Cost	GSC-87	.4903
13	Type of school--General Comprehensive	GSC-1	.5060
45	Remedial Math	GSC-76	.5190
50	Guidance program	GP-1	.5286
24	Senior Class Size	GSC-59	.5389
22	Per Pupil Expenditure	GSC-89	.5487
32	Homework Expected	GSC-11	.5569
33	Study Halls	GSC-12	.5629

*Deleted. This meant that the computer program deleted this item and recomputed the R without it.

correlated, the analysis was done only for the boys. The multiple correlation between the predictors and college attendance rate for boys is very high for the cities and vocational schools (.93); it is moderate for the Southeast schools (.67); and it is fairly low for schools in the Northeast, Midwest, and West (.56). One of the reasons the correlation is much lower for Combination 3 is that there is a much lower college attendance rate in the East than in the West for such schools and this will tend strongly to attenuate the correlations between school and test characteristics and college attendance. The correlations for Combination 1, the large city and vocational schools, tend to be high because the vocational schools have considerable numbers of students who under-perform on such tests as Mathematics II in relation to such tests as Creativity, which probably includes considerable mathematics and reasoning type aptitude along with the other things it measures. The Creativity Test has a very sizable negative regression weight in this study. While Mathematics II correlates .81 with the college attendance rate, the Creativity Test correlates only .41. Since it has considerable correlation with Mathematics II, this means that Creativity ends up as a very strong suppressor variable--that is, a variable with a substantial negative regression weight in predicting.

Absentee Rate Predictors

Table 9-13 shows the results of this study for predicting absentee rate (GSC-29) as successive predictors are added. Again the multiple correlation is extremely high for the large city and vocational schools (.99) and relatively low for the other combinations (.55 and .34, respectively). The very high correlation for Combination 1 is largely a result of combining such extremely heterogeneous groups of schools as poor quality housing--large city schools, vocational high schools, and high quality housing--large city schools. The patterns of validities largely reflect the group differences between the mean performance of these highly different types of groups of schools. The other two combinations of schools are far more homogeneous in most respects than is the first combination.

Dropout Rate Predictors

Table 9-14 shows results for predicting dropout rates for boys (GSC-70) as successive predictors are added. It can be seen that the correlations for this variable are much lower than they were for absentee rate or college attendance (.78, .35, and .33, respectively). It is particularly interesting to note that the correlation between scholastic aptitude and dropout has been found to be a great deal lower than the correlation between scholastic aptitude and absenteeism.

Juvenile Delinquency Rate Predictors

Table 9-15 shows the results for predicting juvenile delinquency rate (GSC-69). Here again the multiple correlation is far higher for the city and vocational school group than it is for the other groups (.95, .49, and .44). The high correlation here is derived in part from the very great difference in average juvenile delinquency rate between the vocational high schools and Cities A group of high schools.

Table 9-13

Multiple Correlation Coefficients for Predicting Absentee Rate (GSC-29) As Successive Predictors are Added (Matrix 1A)

Variable	Description	Code	R
Combination 1 - Schools in Cities "A" and "B" and Vocational Schools			
3	English Total Test Score--10th grade	R-230	.6320
4	English Total Test Score--12th grade	R-230	.7344
26	Midyear admission to first grade	GSC-4	.7721
32	Homework expected	GSC-11	.7950
29	Number of class periods per day	GSC-7	.8254
48	PTA	GSC-84	.8459
21	Housing quality, low cost	GSC-87	.8616
49	Age of housing	GSC-86	.8723
5	Math I Test Score	R-311	.8852
11	Physical Sciences Info. Test Score--12th grade boys	R-107	.8989
6	Math II Test Score	R-312	.9060
7	Math Total Test Score	R-340	.9188
5*	Math I Test Score	R-311	.9184
25	Accreditation	GSC-3	.9268
47	Double schedule	GSC-82	.9318
22	Per pupil expenditure	GSC-89	.9360
46	Summer--New Work	GSC-81	.9423
41	Acceleration policy	GSC-41	.9546
43	Experience of teachers	GSC-58	.9661
15	Class size--science and math	GSC-9	.9803
31	Class size--other	GSC-10	.9905
Combination 2 - Schools in Southeast			
3	English Total Test Score--10th grade	R-230	.4543
15	Class size--science and math	GSC-9	.4911
26	Midyear admission to first grade	GSC-4	.5249
43	Experience of teachers	GSC-58	.5454
Combination 3 - Schools in Northeast and West			
31	Class size--other	GSC-10	.2072
10	Abstract Reasoning Test Scores	R-290	.2657
14	Grade structure	GSC-2	.3072
17	Dropout--Boys	GSC-70	.3397

*Deleted. This meant that the computer program deleted this item and recomputed the R without it.

Table 9-14

Multiple Correlation Coefficients for Predicting Dropout of Boys (GSC-70) As Successive Predictors are Added (Matrix 1A)

Variable	Description	Code	R
Combination 1 - Schools in Cities "A" and "B" and Vocational Schools			
16	Absentee rate	GSC-29	.4456
20	Per cent remedial reading	GSC-77	.4916
30	Starting salary--female	GSC-57	.5244
24	Senior class size	GSC-59	.5551
42	Starting salary-male	GSC-56	.5847
47	Double schedule	GSC-82	.6173
35	Advanced placement	GSC-16	.6407
32	Homework expected	GSC-11	.6650
3	English Total Test Score--10th Grade	R-230	.6928
16*	Absentee rate	GSC-29	.6902
20*	Per cent remedial reading	GSC-77	.6870
35*	Advanced placement	GSC-16	.6761
2	Information Total Test Score--Girls	R-190	.7827
42*	Starting salary--male	GSC-56	.7827
24*	Senior class size	GSC-59	.7763
Combination 2 - Schools in Southeast			
44	Juvenile delinquency	GSC-69	.2059
46	Summer--new work	GSC-81	.2679
43	Experience of teachers	GSC-58	.3150
42	Starting salary--male	GSC-56	.3461
50	Guidance program	GP-1	.3714
46*	Summer--new work	GSC-81	.3496
Combination 3 - Schools in Northeast and West			
44	Juvenile delinquency	GSC-69	.1950
16	Absentee rate	GSC-29	.2572
48	PTA	GSC-84	.2918
39	Homogeneous grouping	GSC-39	.3153
50	Guidance Program	GP-1	.3315

*Deleted. This meant that the computer program deleted this item and recomputed the R without it.

Table 9-15

Multiple Correlation Coefficients for Predicting Juvenile Delinquency Rate (GSC-69) as Successive Predictors are Added (Matrix 1A)

Variable	Description	Code	R
Combination 1 - Schools in Cities "A" and "B" and Vocational Schools			
25	Accreditation	GSC-3	.5139
21	Housing quality	GSC-87	.6028
39	Homogeneous grouping	GSC-39	.6546
29	Number of class periods a day	GSC-7	.7046
28	Number of days in school year	GSC-6	.7417
18	College--Boys	GSC-72	.7653
9	Creativity Test Score	R-260	.8056
7	Math Total Test Score	R-340	.8205
18*	College--Boys	GSC-72	.8176
39*	Homogeneous grouping	GSC-39	.8144
12	Mechanics Information Test Score--Boys	R-112	.8257
26	Midyear admission to first grade	GSC-4	.8353
32	Homework expected	GSC-11	.8440
20	Per cent remedial reading	GSC-77	.8557
19	Per cent junior college	GSC-75	.8644
8	Reading Comprehension Test Score	R-250	.8714
4	English Total Test Score--12th grade	R-230	.8887
47	Double schedule	GSC-82	.8949
15	Class size--science and math	GSC-9	.8988
38	Last renovation	GSC-34	.9028
28*	Number of days in school year	GSC-6	.9002
26*	Midyear admission to first grade	GSC-4	.8971
1	Information Total Test Score--Boys	R-190	.9026
27	Midyear promotion	GSC-5	.9082
6	Math II Test Score	R-312	.9148
43	Experience of teachers	GSC-58	.9216
39	Homogeneous grouping	GSC-39	.9288
46	Summer--new work	GSC-81	.9345
41	Acceleration policy	GSC-41	.9417
34	Accelerated curriculum	GSC-15-7	.9487
Combination 2 - Schools in Southeast			
14	Grade structure	GSC-2	.3364
17	Dropout--Boys	GSC-70	.3954
47	Double schedule	GSC-82	.4423
41	Acceleration policy	GSC-41	.4728
30	Starting salary--Female	GSC-57	.4926
Combination 3 - Schools in Northeast and West			
45	Remedial math	GSC-76	.1967
17	Dropout--Boys	GSC-70	.2601
19	Per cent junior college	GSC-75	.3070
10	Abstract Reasoning Test Score	R-290	.3379
21	Housing quality--Low cost	GSC-87	.3655
15	Class size--science and math	GSC-9	.3924
37	Age of building	GSC-33	.4098
5	Math I Test Score	R-311	.4198
33	Study halls	GSC-12	.4287
13	Type of school--General comprehensive	GSC-1	.4374

*Deleted. This meant that the computer program deleted this item and recomputed the R without it.

Conclusions

It has been found that certain student outcomes such as achievement test means, college attendance rate, and absentee rate are relatively highly predictable from combinations of school characteristics.

It has been found that the interrelationships of student outcomes, tests, and school characteristics can vary very markedly from one type of school group to another.

It has been found that absenteeism has a considerably higher correlation with aptitude than does dropout rate.

Student achievement in most subjects is predictable to a high degree from ability plus amount of exposure to experiences related to the subject matter areas. For English achievement the most important factors are:

a. Being in an academic curriculum rather than in a vocational high school
b. Having well-paid and experienced teachers
c. Having an adequate library in the school
d. Having considerable homework
e. Having study halls

Somewhat the same conclusions can be made about other subject matter areas except that in cases of areas other than English, the size of the library is not as important.

The Project Talent data to date indicate that four of the most important treatment factors closely and uniquely associated with school outcomes such as achievement, going to college and staying in school are:

a. Teacher salaries
b. Amount of teachers' experience
c. Number of books in the school library
d. Per-pupil expenditure

On the other hand, the data on Project Talent indicate that the following characteristics seem unlikely to be important causes of excellence of school output:

a. School size
b. Average size of classes
c. Age of building
d. Suburban location

Of course, showing a unique association between a school factor and student outcomes does not necessarily indicate a causal relationship; it may just be mirroring some outside or common factor that happens to overlap. However, finding that there is little unique association certainly minimizes the likelihood that an important causal factor is operating.

The multiple regression studies reported in this chapter show promise of isolating unique relationships between specific school factors and school outcomes when as many as thirty other important school and community characteristics have been held constant in multiple regression analyses. School innovations may be evaluated by comparing the results obtained with the results that would be predicted on the basis of past practices and experience factors and by important situational factors.

Educational achievement in various subject matter areas seems very closely associated with the amount of work taken or assigned in such areas and with various types of aptitude for learning such work. However, achievement in these areas has a very low relationship to most school characteristics even with many such as school size and average class size that have long been thought to be very critical as factors in the achievement of school excellence.

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Chapter 10

RELATION OF SCHOOL PRACTICES AND CHARACTERISTICS TO EDUCATIONAL OUTCOMES

Why Do the Graduates of Different Schools Differ So Much in Performance?

The 17 homogeneous groups of schools have been shown to differ greatly in such school outcomes as achievement, college attendance, absenteeism, dropout rate, and delinquency rate. What explanation is there for these sharp differences? Is it the amount of money spent in the school? Is it the size of the school? Is it the average class size, or just what? There is no simple answer to these questions and the evidence seems to indicate that no single school characteristic factor is an absolute prerequisite to quality of outcomes. There are many roads to school excellence.

A very promising method has been developed for grouping public senior high schools into taxonomy groups of similar schools and comparing these groups. In effect, these taxonomy classification groups, as explained earlier, separate schools on the basis of rural versus urban factors, socioeconomic factors, regional factors, and general versus vocational high schools. The charts obtained by plotting the values by group for one measure versus some other measure often show very sharp pictures of the nature of the differences among these taxonomy groups. In this way many complex relationships between various school characteristics and educational outcomes can be seen. These two-way plots are somewhat analogous to graphic representation of a partial correlation with rural-urban, socioeconomic, vocational high schools versus others with regional factors held constant, and thus in effect "partialed out". This is equivalent to a residual plot showing simultaneously the interaction of five different variables. In all cases the values plotted are averages, with the schools weighted to reproduce the population of schools. The figures which follow illustrate this method of analysis.

Figure 10-1 shows the relationship between per cent of poor quality housing schools in each group and Abstract Reasoning Test score means for each of the taxonomy groups. It can be seen at a glance that housing quality is related to Abstract Reasoning Test score level. In every case the lower quality housing group is substantially lower in Abstract Reasoning

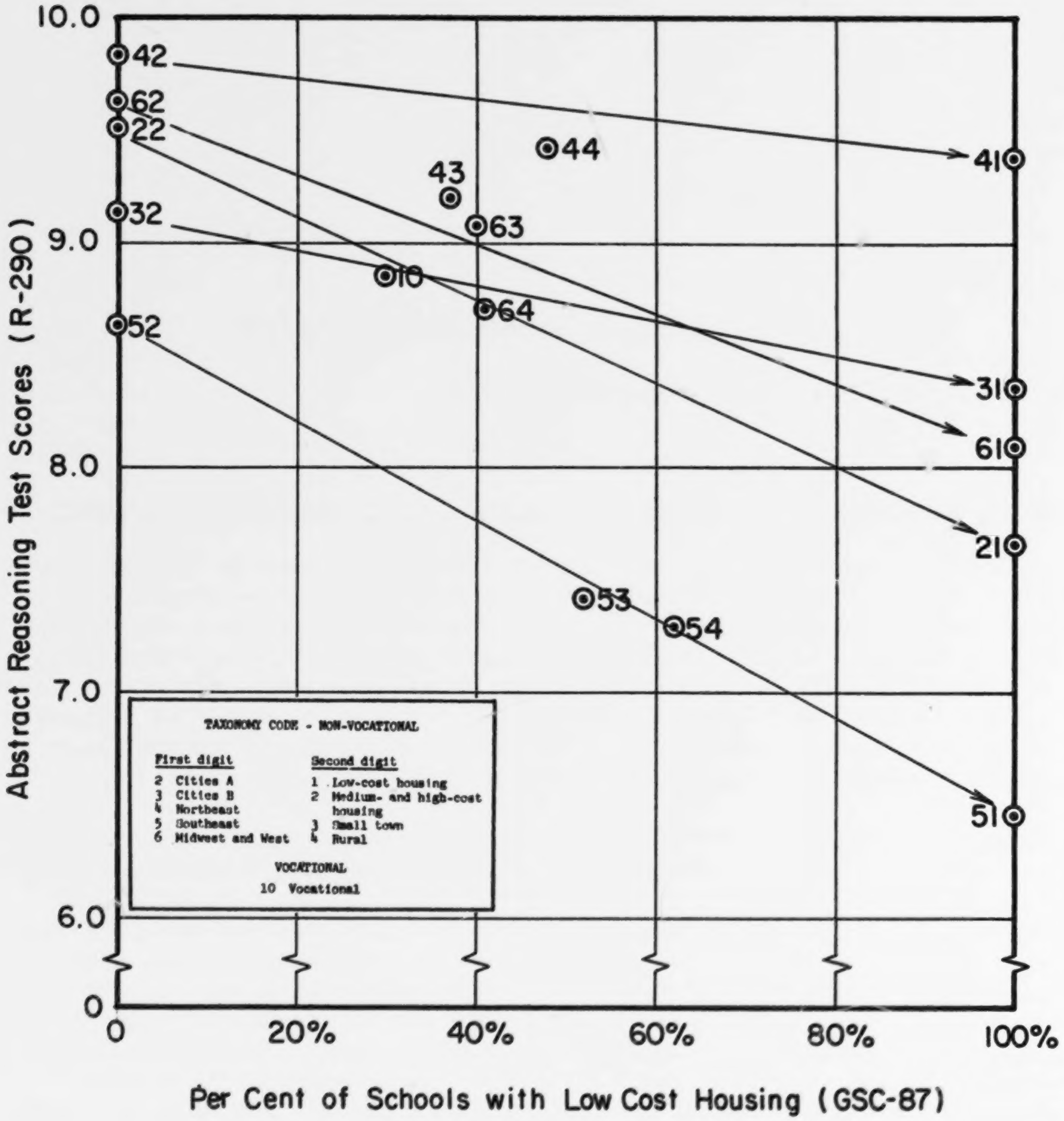

Figure 10-1. Per Cent of Low Cost Housing (GSC-87) and Abstract Reasoning (R-290) test score means plotted for each taxonomy group

than is the corresponding high quality housing group from the same area.

Figure 10-2 shows the relationship between housing quality and per-pupil expenditure (entire system). It can be seen in this figure that housing quality has little relationship to per-pupil expenditure. The high relationship between housing quality and Abstract Reasoning, plus the low relationship between housing quality and per-pupil expenditure, makes it difficult to assess the real relationship between per-pupil expenditure and test performance, unless such variables as housing quality are documented and held constant.

Figure 10-3 shows the relationship between housing quality and size of the senior class. Here can be seen something of a tendency for the high quality housing type schools to be larger than the lower quality housing type schools. This is particularly pronounced for the Cities A groups, where the average senior class size of the higher quality housing groups is nearly double that of the lower quality housing group. As a result, most of the extremely large high schools in the country are from higher quality housing areas. The reasons for this are not clear, but it is possible that it is a result of school policy which definitely limits the size of schools in less favored neighborhoods. This factor causes an appreciable correlation between school size and socio-economic status, and thus contaminates any comparisons that might be made of schools of different size. This greatly distorts any simple relationship studied between size of senior class and performance of the graduates of a school. It can be seen that the average size of the senior class in the rural and town schools over the entire nation is quite small, being in the vicinity of 50 or less.

Figure 10-4 shows the relationship between per-pupil expenditure (entire system) and English achievement. Some groups have high achievement and low expenditure, and some groups have low achievement and high expenditure. Over-all, the figure shows a moderate degree of relationship between English achievement and expenditure. However, it does not appear that a high expenditure rate is a necessary prerequisite for high performance in English achievement. Other factors can compensate for lower expenditure rates in some cases.

The arrows point from the higher quality housing groups to the corresponding lower quality housing groups. A pronounced tendency can be seen for the higher groups to have higher English achievement than the corresponding lower quality housing groups of schools. The points for the town and rural school groups in the same geographical area are connected. It can be seen that they are very close together. This would seem to be evidence that they are similar enough in these two very important dimensions to justify combining in some future studies.

Relationship of Per-Pupil Expenditure to Size of Senior Class, Class Size other than Mathematics and Science, and Starting Salaries of Male Teachers.

The amount of money spent on each pupil is a very important factor in high school education. The figures from which the per-pupil expenditure for

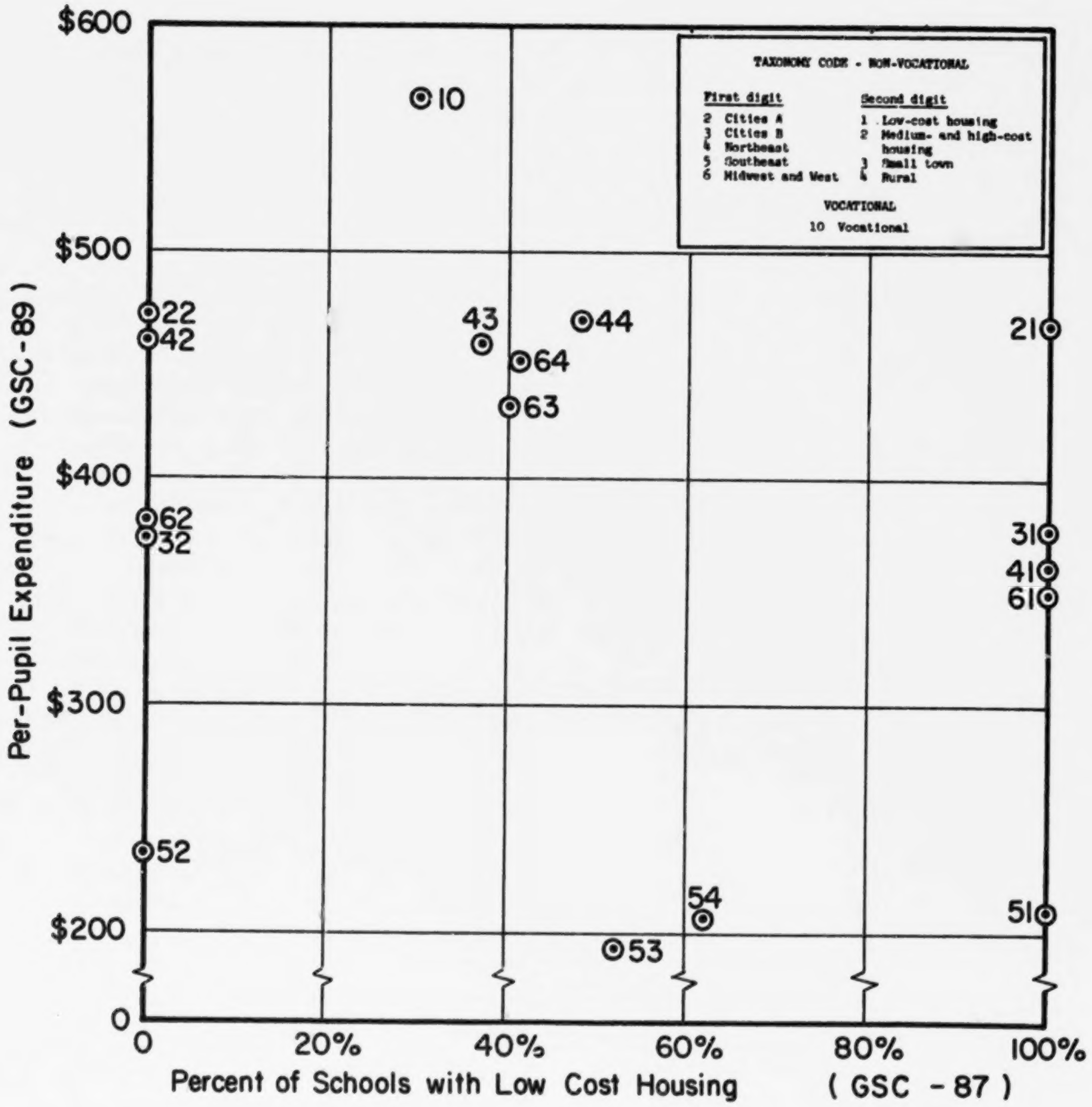

Figure 10-2. Per Cent of Low Cost Housing (GSC-87) and average Per-Pupil Expenditure (GSC-89) plotted for each taxonomy group

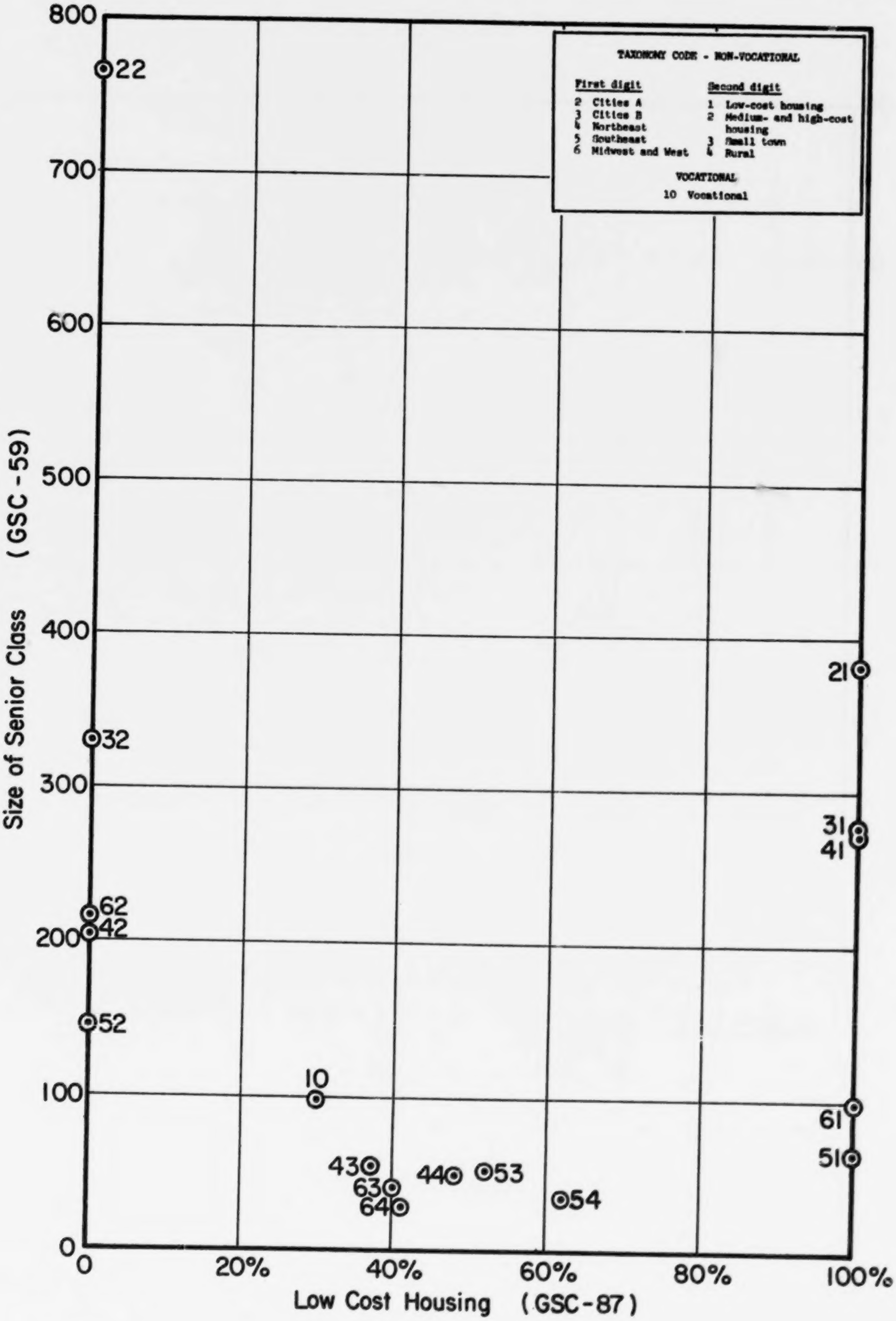

Figure 10-3. Per Cent of Low Cost Housing (GSC-87) and average Size of Senior Class (GSC-59) plotted for each taxonomy group

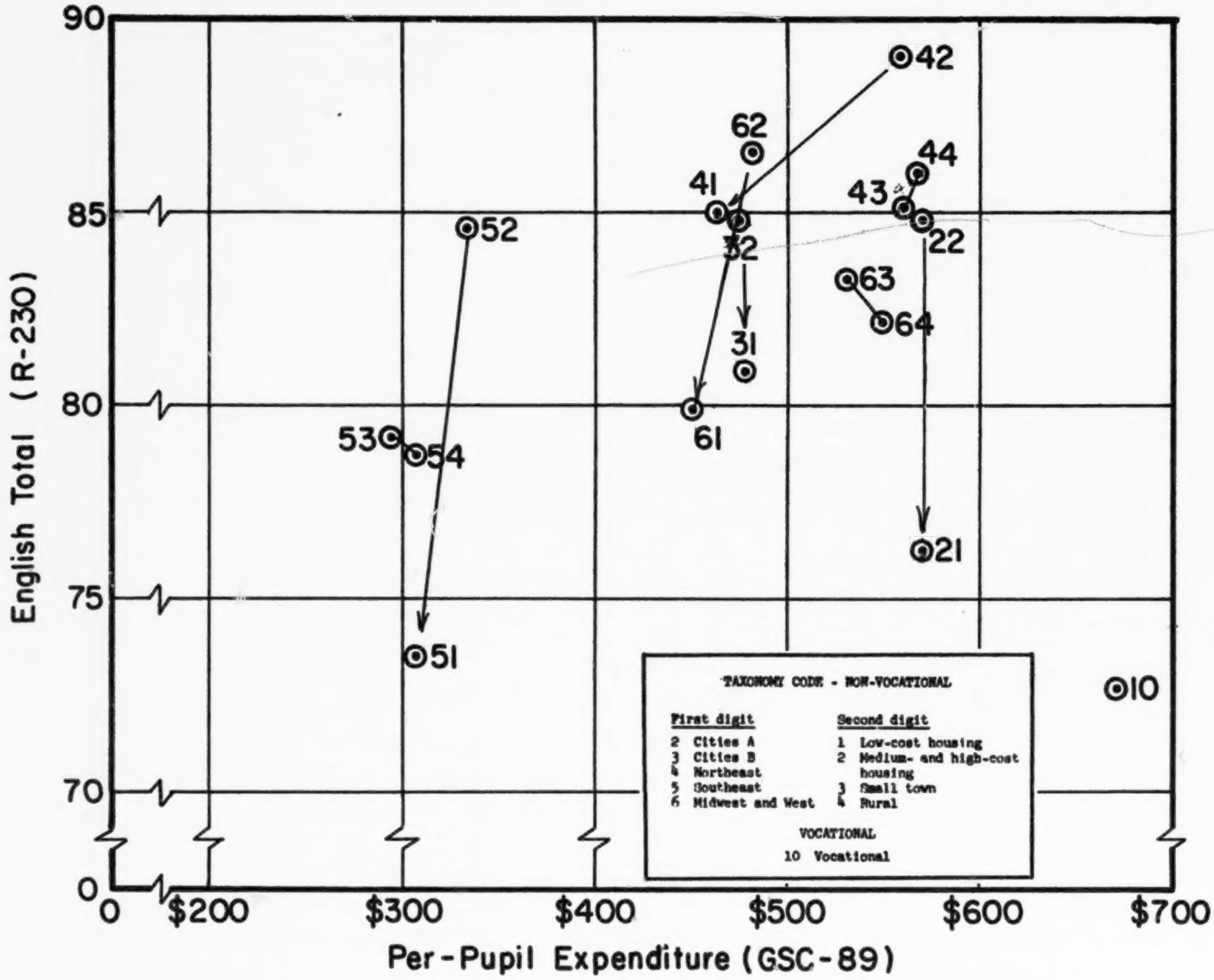

Figure 10-4. Average Per-Pupil Expenditure (GSC-89) and English Total (R-230) test score means plotted for each taxonomy group

each school system was obtained come from the following question in the General School Characteristics Questionnaire:

> "89. In dollars per year, what was the average per-pupil expenditure for all purposes in your school system last year (Grades 9-12)?
>
> $__________________per year."

A large proportion of schools were unable to report the per-pupil expenditure for their own school, since records were not kept for individual schools.

Figure 10-5 shows the relationship between average class size in classes other than math and science, and per-pupil expenditure. In this figure it can be seen that the groups of schools with higher and lower quality housing do not differ appreciably in terms of per-pupil expenditure or class size. The lower quality housing schools tend to have as much money spent on them, and tend to have no larger class size than do the higher quality housing schools. The three pairs of rural and town schools are again alike.

Figure 10-6 shows the relationship between teacher's salary for male teachers and per-pupil expenditure. The relationship here is very high, of course, since salary of teachers is a major component of per-pupil expenditure. The pairs of urban schools cluster rather closely here, indicating that there is little difference between these pairs in terms of teachers' salary schedule and per-pupil expenditure. Since it has been found that these pairs of schools differ greatly in terms of achievement and other outcome variables, it would seem probable that per-pupil expenditure and teacher salaries are not primary determiners of performance although they are related to it. Here the Western rural and town schools, and the Northeastern rural and town schools cluster very tightly. In most of the other charts these same schools also tend definitely to cluster. For some purposes it might be justifiable to combine all of the rural and town schools, outside of the South, into a single group. The series of charts seem to indicate that once the quality-of-housing and size-of-city factors have been controlled, regional differences outside of the Southeast practically vanish. It might be possible to use only two geographical groups, the Southeast and the rest of the country, after rural-urban and socio-economic factors have been controlled.

Analysis of Per-Pupil Expenditure Versus Absentee Rate, Dropout Rate, Juvenile Delinquency, and Per Cent of Boys Attending College

Figure 10-7 shows the relationship between absentee rate and per-pupil expenditure. The arrows pointing from the higher quality housing groups to the lower quality housing groups indicate a marked tendency for the absentee rate to be high in relationship to per-pupil expenditure for the lower quality housing groups in the large cities, and there is also a trend toward relatively low absentee rates for all four groups of Western and Midwestern schools. Absenteeism is highest in large cities and Southeast rural and town school groups. The three pairs of rural and town schools

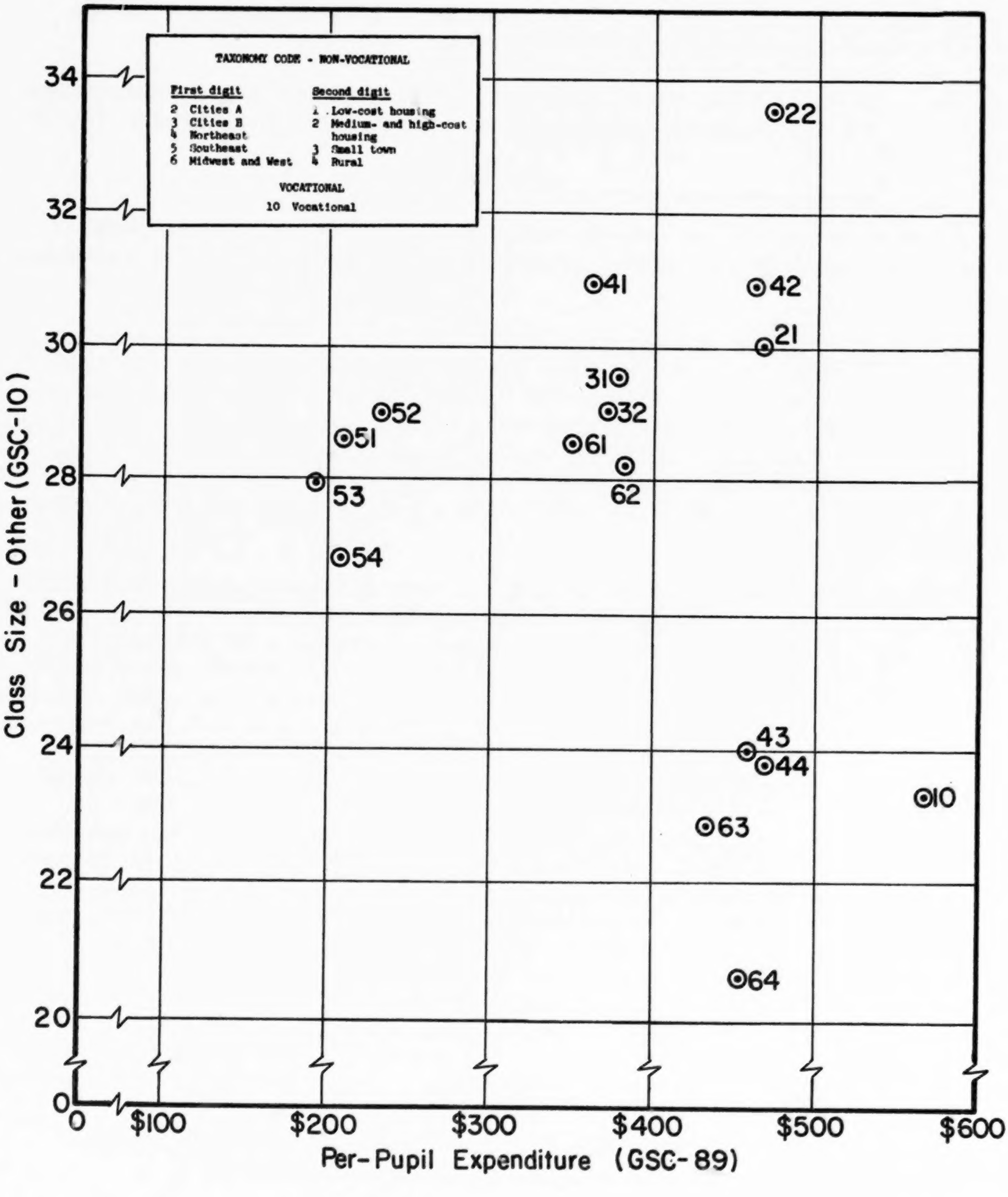

Figure 10-5. Average Per-Pupil Expenditure (GSC-89) and average Class Size Other Than Math and Science (GSC-10) plotted for each taxonomy group

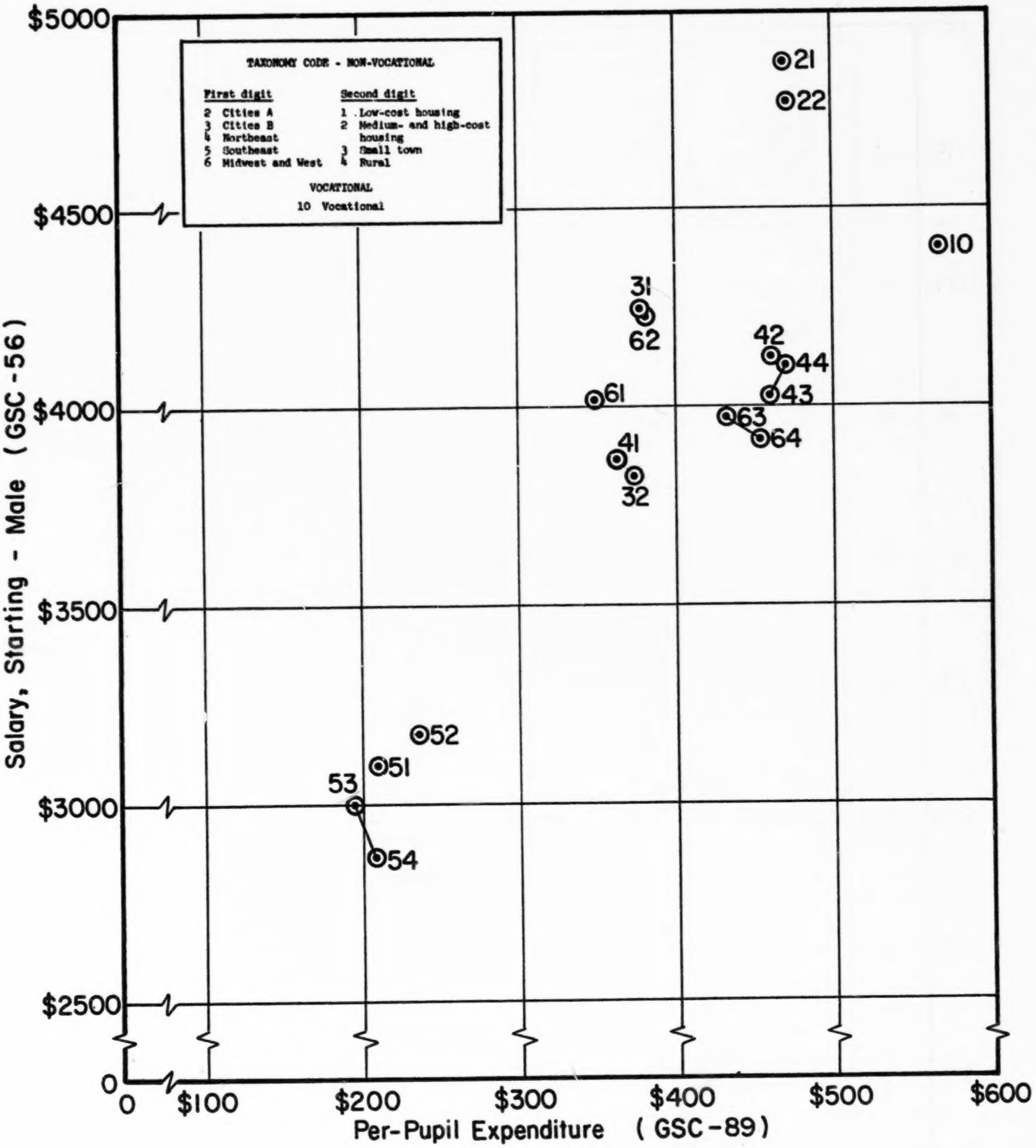

Figure 10-6. Average Per-Pupil Expenditure (GSC-89) and average Starting Salary for Male Teachers (GSC-56) plotted for each taxonomy group

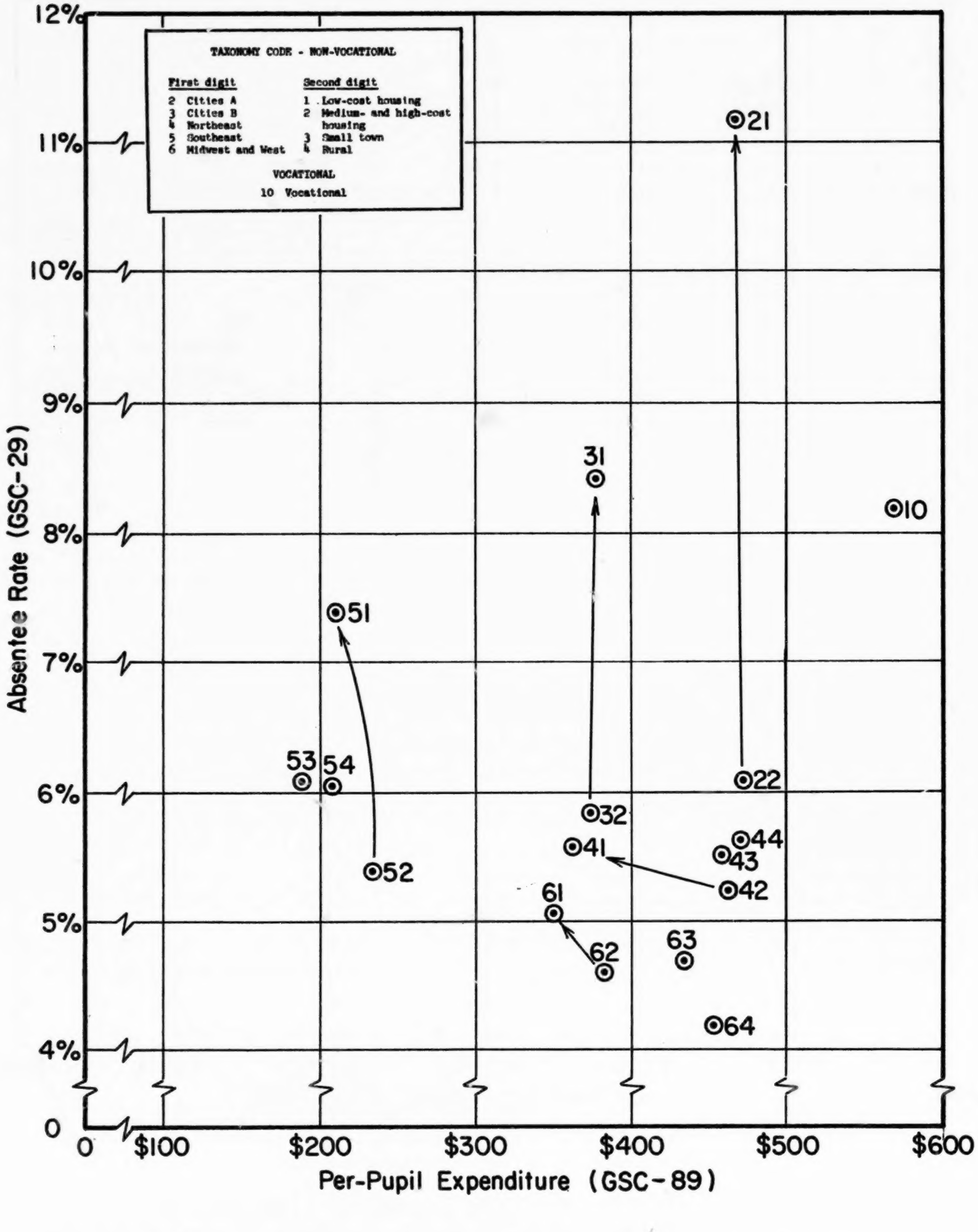

Figure 10-7. Average Per-Pupil Expenditure (GSC-89) and average Absentee Rate (GSC-29) plotted for each taxonomy group

are close together here, and again it is indicated that the three pairs might be combined into three super groups.

Figure 10-8 shows the relationship between dropout rate -- between Grade 10 and Grade 12, and per-pupil expenditure. The picture here is very similar to that in Figure 10-7, except in respect to the Cities A schools and vocational schools which, of course, are largely in Cities A. Here, these schools are very similar in respect to the relationship of dropout rate to per-pupil expenditure. In respect to absentee rate, they were quite different. The three pairs of rural and town schools again seem very close.

Figure 10-9 shows the relationship between principal's report of per cent of the boys attending college and per-pupil expenditure. Here, as the arrows point out, there is a very pronounced tendency towards a lower college attendance rate in the schools in the lower quality housing groups. There is also a noticeable tendency for the rate to be lower for the rural groups than for the town groups. The rural and town schools are less alike in these two dimensions than in other studies. However, even here they seem close enough to warrant combining.

Figure 10-10 shows the relationship between juvenile delinquency rate (per cent of students per year appearing before juvenile courts) and per-pupil expenditure. Here can be seen very great differences between the Cities B high quality housing and low quality housing groups, and Cities A high quality housing groups and vocational high schools. However, there is no difference at all between the high quality housing schools and the low quality housing schools in Cities A. This is a most surprising finding, and might perhaps be the result of diverting the more unruly students to the vocational high schools. There is little difference in delinquency rate for schools in higher and lower quality in urban groups outside of Cities A and B. The rural and town school pairs are fairly close together. The very pronounced structuring of the relationship between juvenile delinquency and per-pupil expenditure in this graph strongly indicates the importance of separate treatment of the Cities A and Cities B schools, and indicates that combining all cities into the same group sometimes can obscure some very important and striking relationships.

Figure 10-11 shows the relationship between average size of class, in other than math and science, and size of the senior class. Here is apparent a fairly substantial curvilinear relationship between the average class size and the size of the school as indicated by the size of the senior class. This greatly confuses the problem of studying average class size in relation to any outcome variables and indicates that it is necessary to study relationships among homogeneous groups of schools rather than all schools combined. It is interesting to note the great variance in average school size among the different taxonomy groups. Average school size in some of the groups is vastly greater than it is in others.

Reading Comprehension Related to Various School Characteristics

Figure 10-12 shows results for Reading Comprehension versus per-pupil

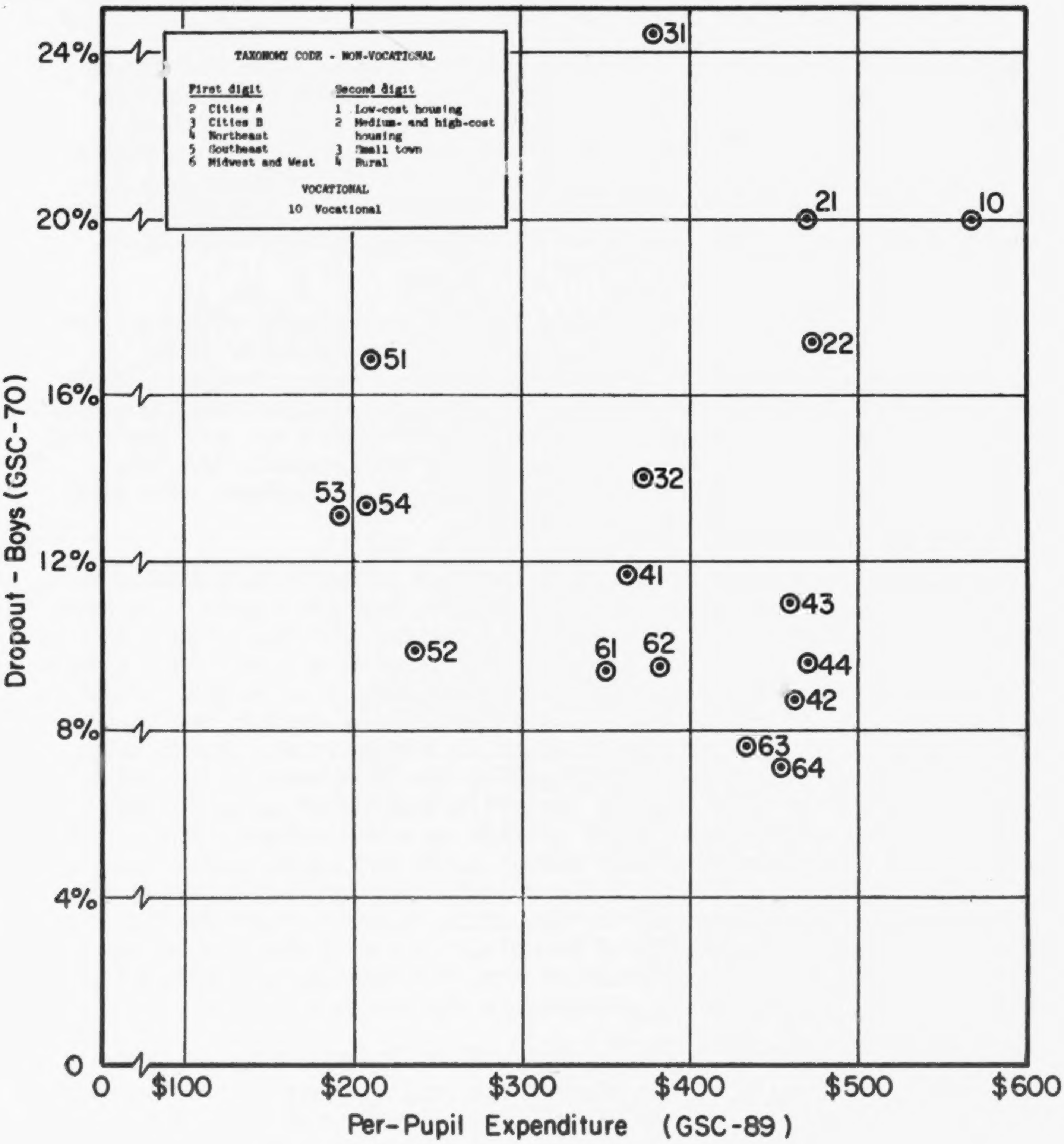

Figure 10-8. Average Per-Pupil Expenditure (GSC-89) and average Dropout Rate for Boys (GSC-70) plotted for each taxonomy group

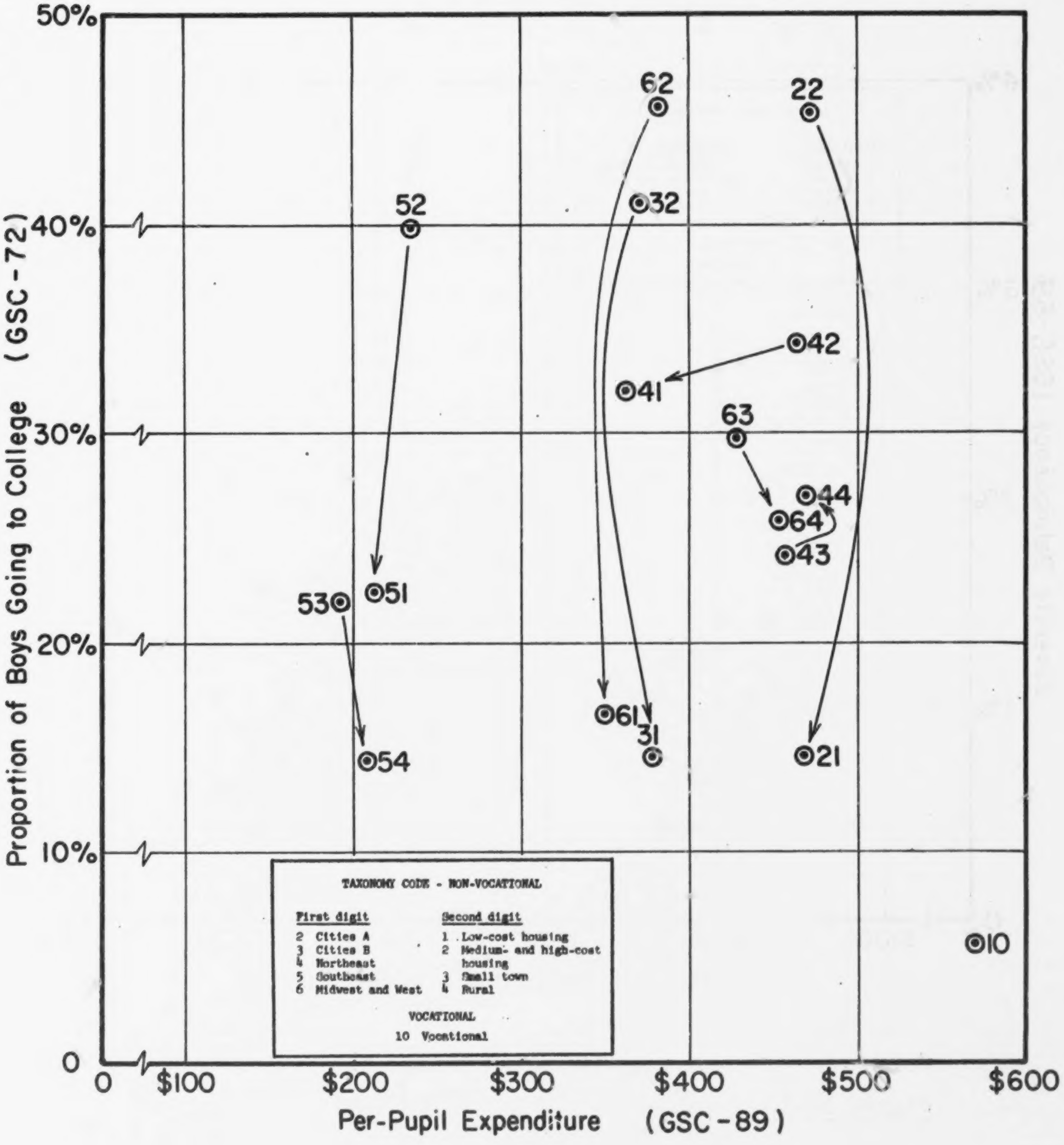

Figure 10-9. Average Per-Pupil Expenditure (GSC-89) and proportion of Boys Going to College (GSC-72) plotted for each taxonomy group

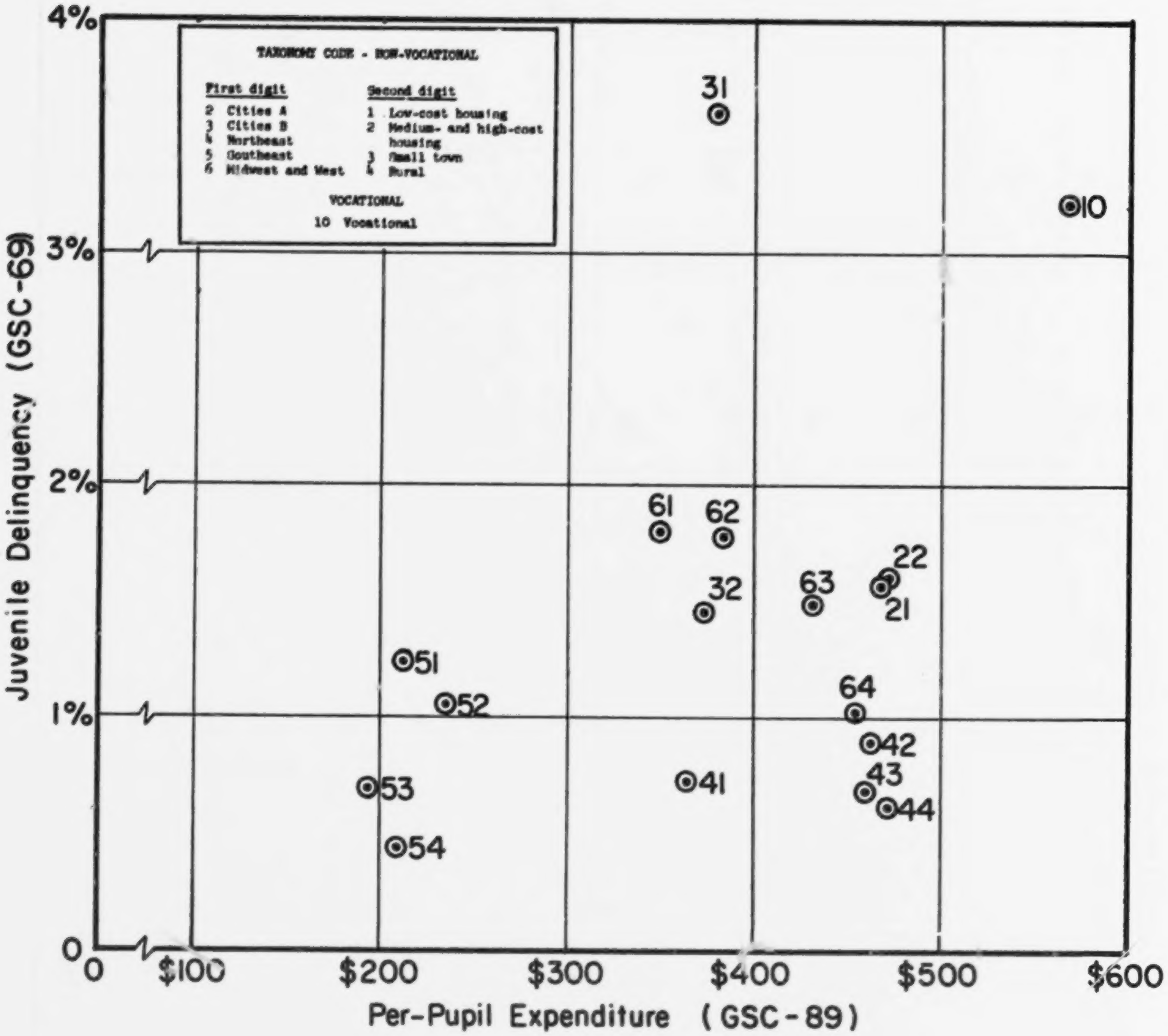

Figure 10-10. Average Per-Pupil Expenditure (GSC-89) and per cent Juvenile Delinquency (GSC-69) plotted for each taxonomy group

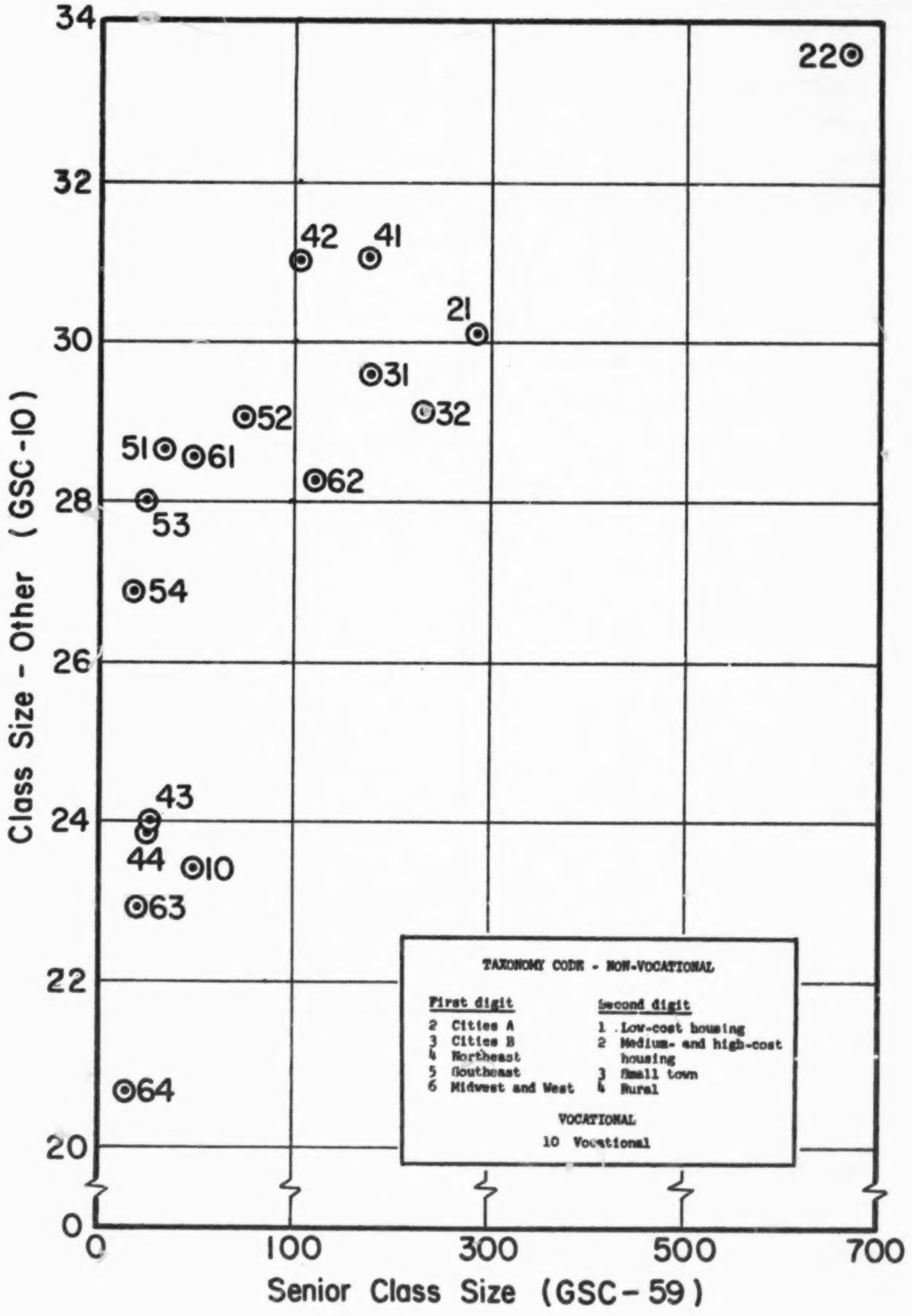

Figure 10-11. Average Senior Class Size (GSC-59) and average Class Size Other Than Math and Science (GSC-10) plotted for each taxonomy group

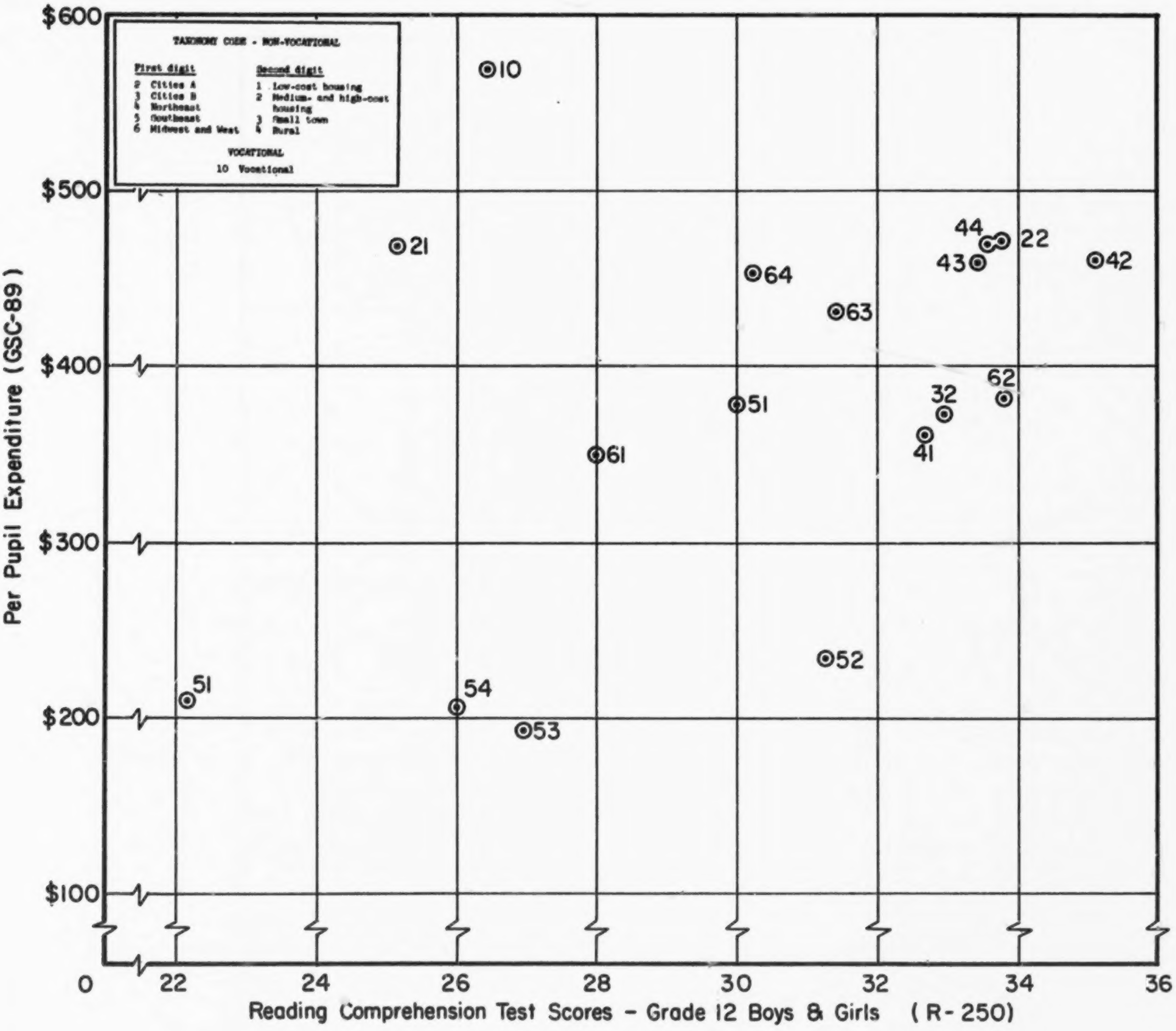

Figure 10-12. Reading Comprehension (R-250) test score means for Grade 12, and average Per-Pupil Expenditure (GSC-89) plotted for each taxonomy group

expenditure (entire system). There is some positive relationship here overall but none within the regional groups.

Figure 10-13 shows the relationship of the per cent of students enrolled in a college-preparatory curriculum to Reading Comprehension. The values for the percentage of students enrolled in a college-preparatory curriculum were obtained from Item 62 of the General School Characteristics Questionnaire. The measure of reading comprehension used for each taxonomy group was the average Reading Comprehension Test score for Grade 12. The top point in the figure is for taxonomy group 42, Northeast urban schools in high quality housing. This group had an average Reading Comprehension Test score of slightly greater than 35, and about 46 per cent of the school's student body, on the average, enrolled in a college-preparatory curriculum. The figure shows that there is a moderate positive relationship between the proportion of students in college-preparatory curricula and Reading Comprehension level. One notable exception to this is taxonomy group 51, Southeastern schools, urban low quality housing, where the reading level is low, yet the proportion of students in the college-preparatory curriculum is relatively high. The figure also shows that there is a strong tendency for the schools in better quality housing areas to cluster at the upper part of the figure and for the schools in the lower quality housing areas to cluster in the lower part. A notable exception to this is taxonomy group 41, Northeast urban low quality housing, low income schools. However, there are only four schools in this group.

Figure 10-14 shows the relationship of the per cent of students enrolled in a general course to Reading Comprehension Test mean for Grade 12. The values for the percentage of students enrolled in general course programs were obtained from Item 67 of the General School Characteristics Questionnaire. It can be seen from this figure that there is a very high negative relationship between the proportion of students enrolled in a general curriculum and Reading Comprehension. This is probably primarily because schools design their curricula to fit the reading level of their students rather than because the curriculum determines the reading level of the student. It will be seen that there is a tendency for the Northeastern schools (Groups 41, 42, 43, and 44) and the Western urban-high quality housing (62) schools to have a relatively low proportion of students in the general curriculum along with a relatively high level of reading comprehension.

Figure 10-15 relates the average per cent of PTA membership reported by the schools of each taxonomy group to the average Reading Comprehension Test score. There seems to be a low positive relationship between PTA membership and reading level. It will be noted that the patterns made by the groups within the figure are perhaps more meaningful. There seems to be a definite association between reading and PTA membership as indicated by the four groups representing the Northeast.

Project Talent English Tests Related to Various School Characteristics

Figure 10-16 shows English Total for the 12th grade vs. the per cent of the boys attending college. The relationship here is moderately high.

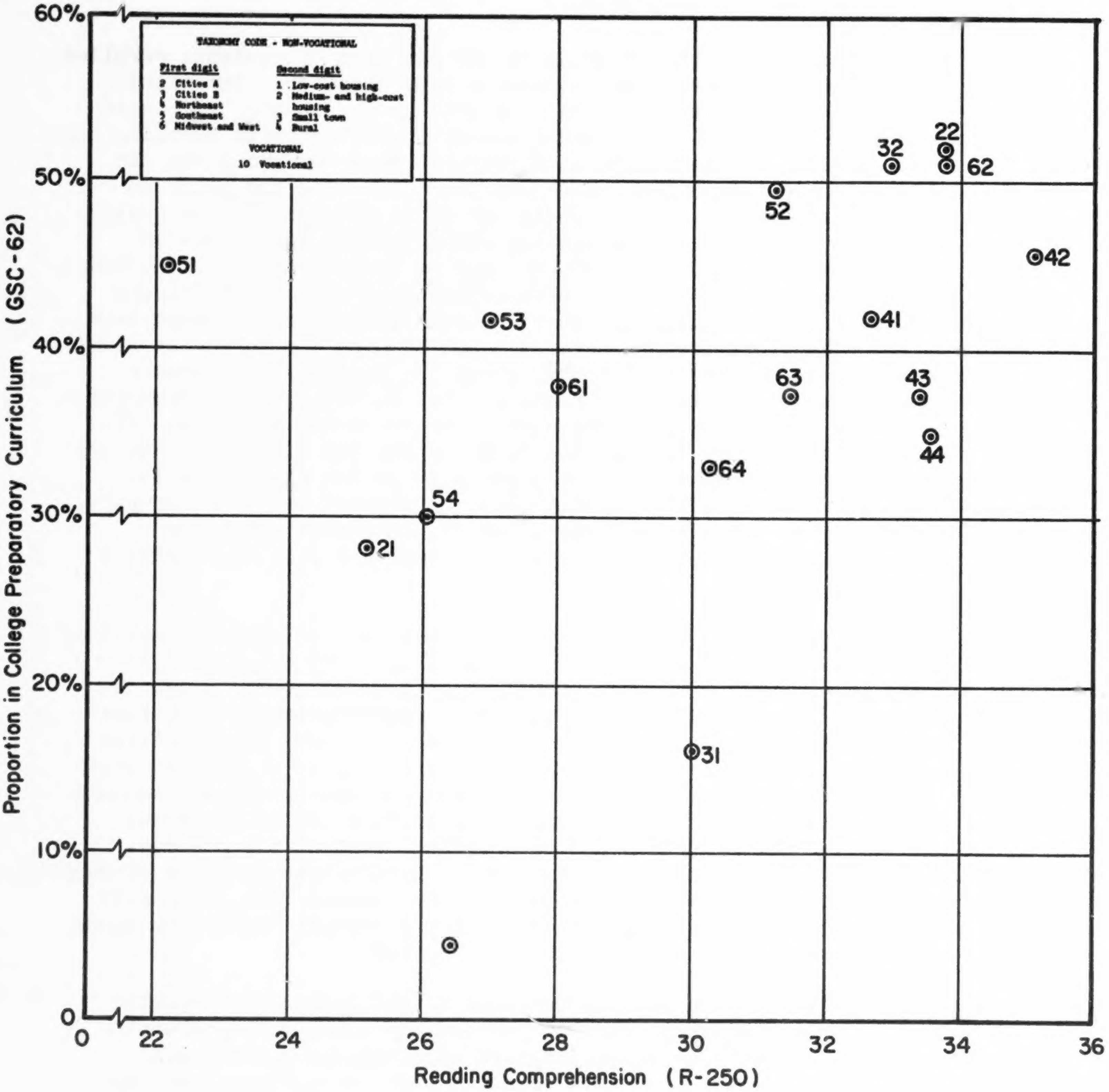

Figure 10-13. Reading Comprehension (R-250) test score means for Grade 12, and proportion in College-Preparatory Curriculum (GSC-62) plotted for each taxonomy group

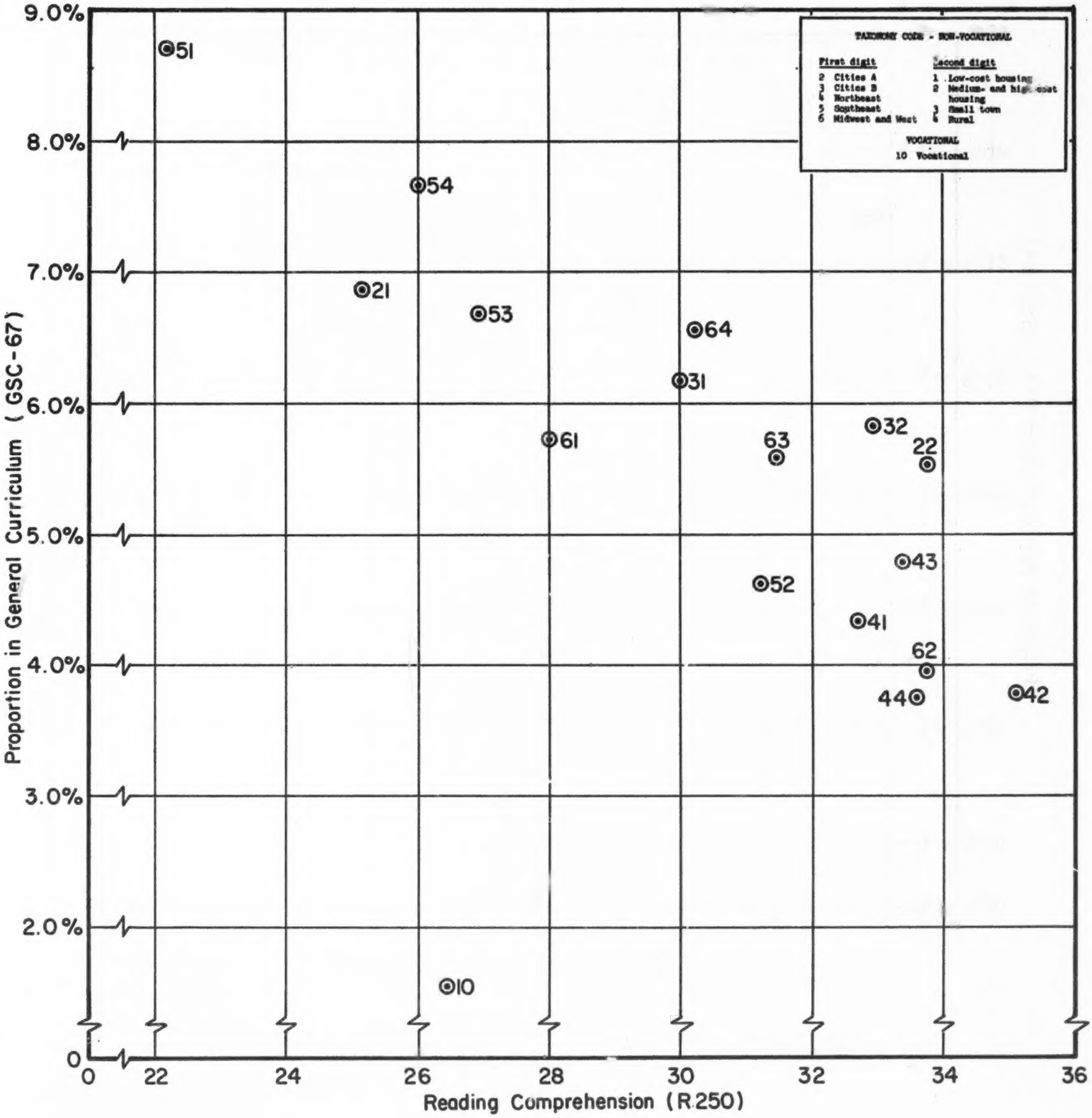

Figure 10-14. Reading Comprehension (R-250) test score means for Grade 12, and proportion in General Curriculum (GSC-67) plotted for each taxonomy group

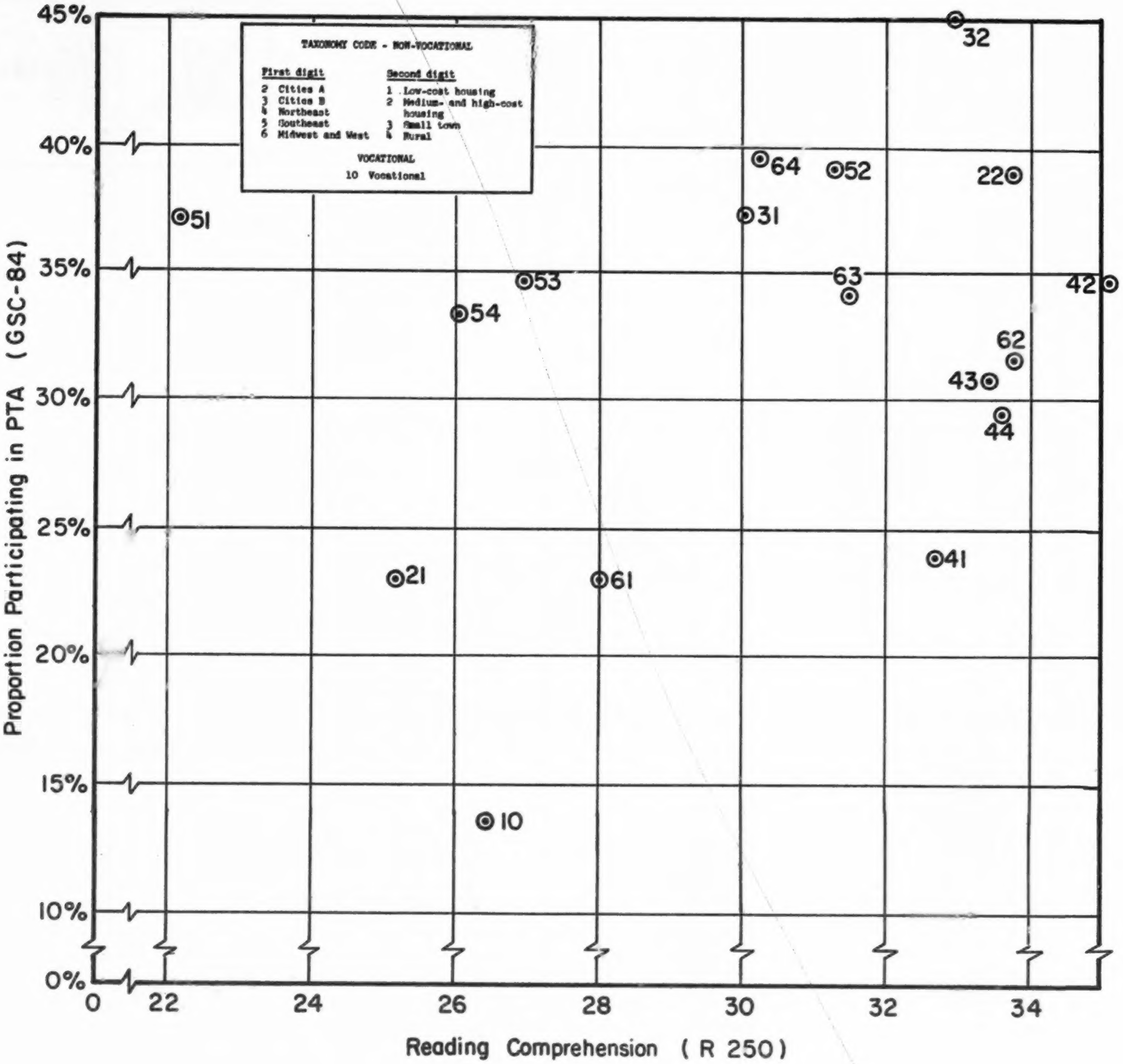

Figure 10-15. Reading Comprehension (R-250) test score means for Grade 12, and proportion Participating in PTA (GSC-84) plotted for each taxonomy group

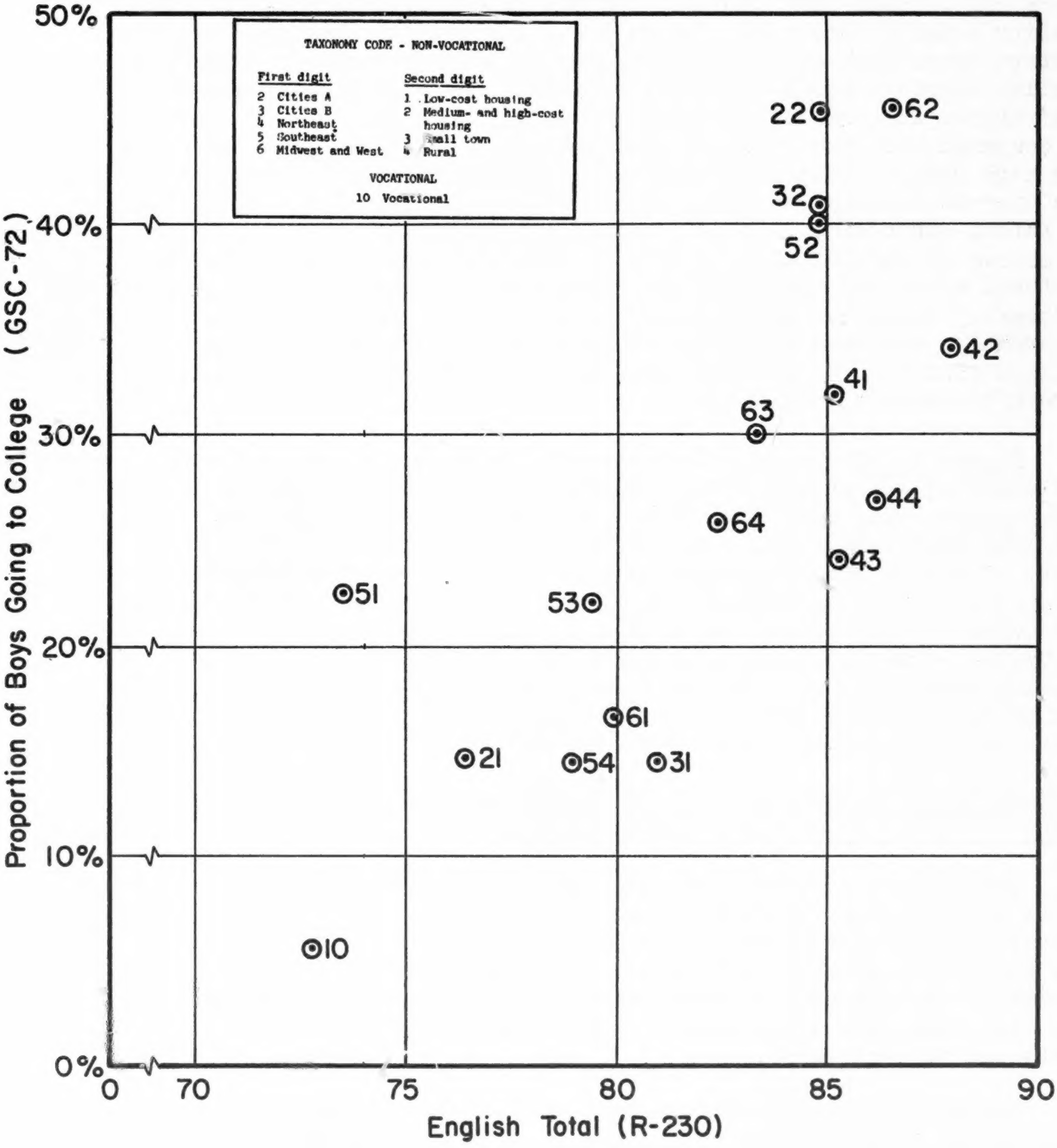

Figure 10-16. English Total (R-230) test score means for Grade 12, and proportion of Boys Going to College (GSC-72) plotted for each taxonomy group

There can be seen some tendency for the Group 51, Southeastern urban-low quality housing, Group 22, Cities A -- high quality housing, Group 62, Western urban-high quality housing, Group 52, Southeastern urban-high quality housing, and Group 32, the Cities B -- high quality housing -- to overperform in terms of having an unusually high per cent college rate as compared with the level of achievement in English. This trend for the high quality housing groups in the urban areas is to be expected, but the over-achievement of Group 51, Southeastern urban-low quality housing, is rather surprising. It is possibly a function of very active and effective recruiting efforts of some organizations to locate talent in Southern areas and encourage it. Here the town and rural groups are again moderately close but not as close as they are in some of the other charts. Apparently, the town and rural schools differ more in the tendency to attend college than they do in other dimensions. However, they are still close enough to warrant combining.

Figure 10-17 shows the relationship between English achievement, Grade 12, and starting salaries for male teachers. Here, as in regard to over-all expenditure rate, one can find many groups of schools with low salary levels and high achievement and other groups with high salary level and low achievement. There is a very pronounced tendency for the lower quality housing groups to have lower English achievement, but about the same salaries as the corresponding area group with high quality housing. This is pointed up by the arrows pointing from the higher quality to the lower quality housing school groups. The rural and town groups are connected, and it can be seen that the pairs of points are very close. There is some over-all positive relationship between salary level and English achievement level.

Project Talent Reading Comprehension Test Related to Other Project Talent Tests -- Under-and Over-Performance of Groups of Schools on Achievement Tests

The concept of over- and under-performance is a tricky one, and yet it is of universal interest to people who want to know how well their schools are doing compared to how well they might be expected to do. It has been shown earlier that school achievement is affected strongly by a number of factors such as urban status, socio-economic status, region, and the like, and that achievement tests are quite highly related to aptitude tests and to each other.

One apparently promising method of describing over- and under-performance on one test relative to another is to plot pairs of test score means for groups of schools in a two-way distribution, as for Reading Comprehension and Abstract Reasoning (Figure 10-18). Here it can be seen that the points form a very flat oval with all of the points very close to a straight line. However, one notable exception to this is Group 10 -- vocational high schools. The marked deviation of Group 10 from the tendency of the other groups is towards the upper left, and this indicates a noticeable tendency for them to be lower in Reading Comprehension than in Abstract Reasoning. This might be partly a factor of the self-selection and direct assignment to vocational high schools of students who tend to be poor readers. On the other hand, it is quite possibly also a result of students in vocational high schools being assigned much less reading. This is discussed at greater

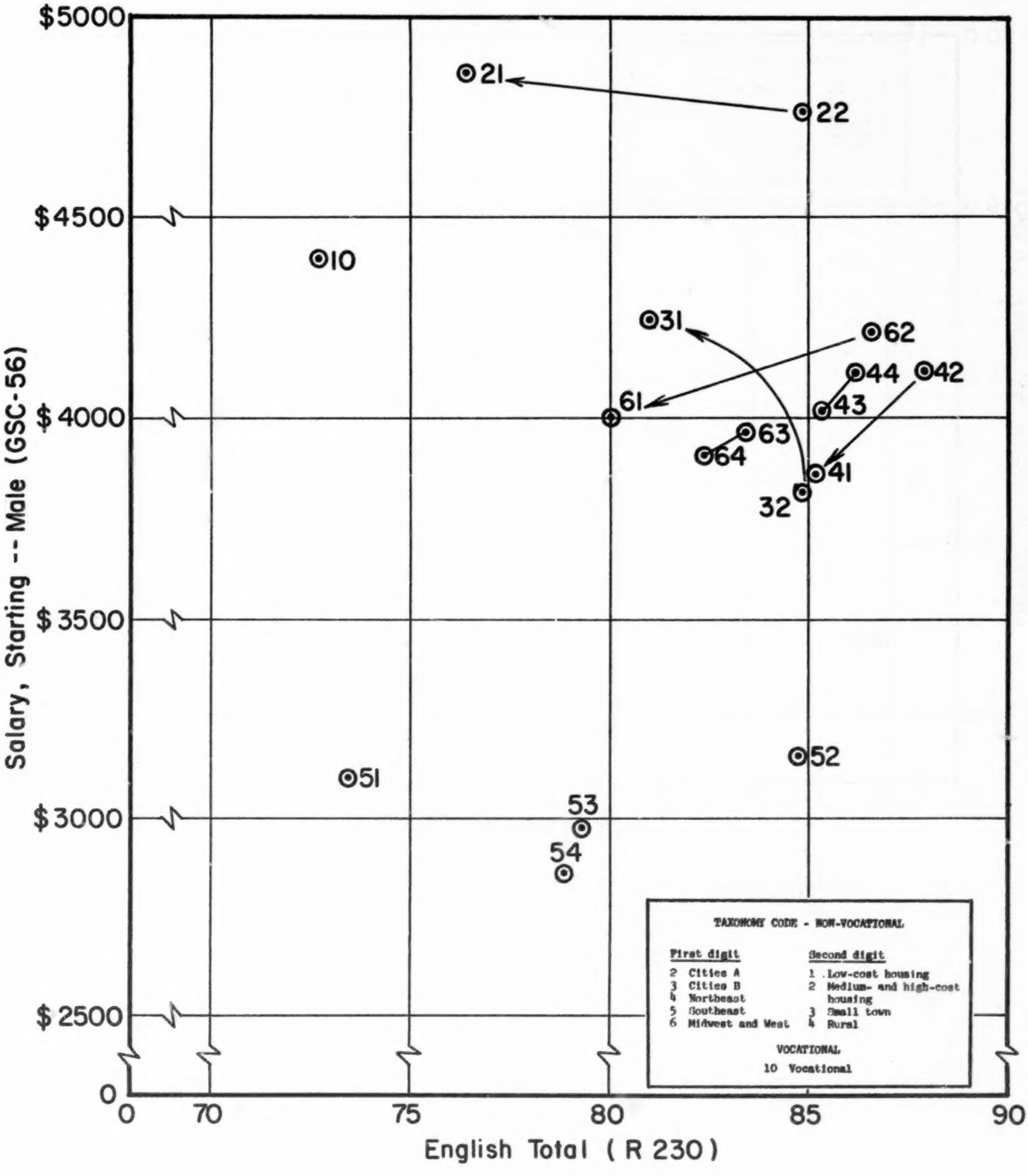

Figure 10-17. English Total (R-230) test score means for Grade 12, and Starting Salary for Male Teachers (GSC-56) plotted for each taxonomy group

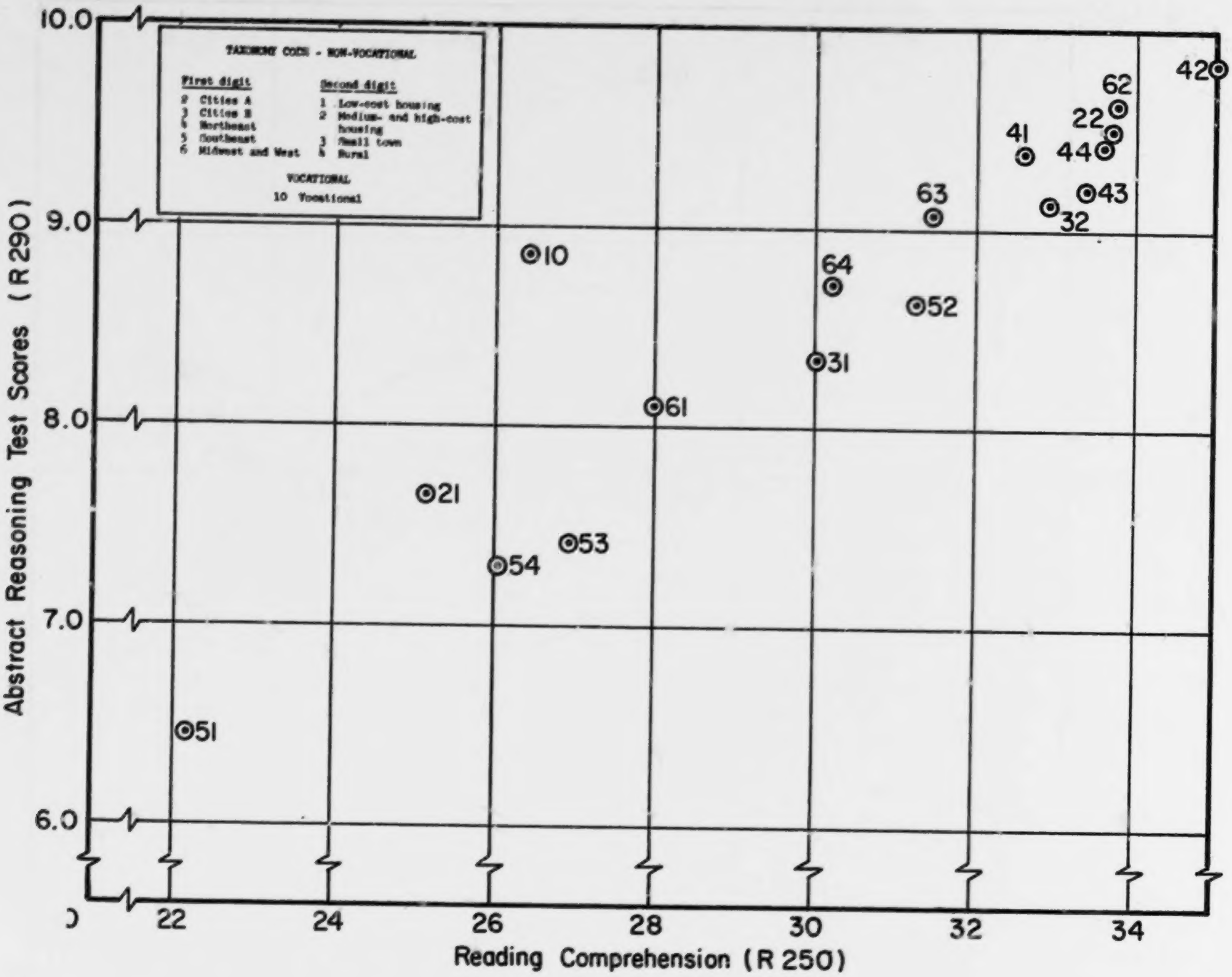

Figure 10-18. Reading Comprehension (R-250) test score means for Grade 12, and Abstract Reasoning (R-290) test score means for Grade 12, plotted for each taxonomy group

length later on. There is no apparent pattern of deviations and over- and under-performance of the other types of groups such as rural-urban, high quality housing, low quality housing, and the like. It is of interest to note how nearly the four Southeastern group points form a straight line, and how nearly the four Western groups form a straight line.

Figure 10-19 shows the relationship between Reading Comprehension Test and Mathematics II--Intermediate Mathematics. Here two of the points stand out noticeably from the others, and the others form almost a perfect straight line. The points showing under-performance in mathematics as compared to reading are the large and moderate size cities, low quality housing. However the vocational schools which have a high proportion of boys are also under-performing when this is considered. This is very probably a function of different emphases in curriculum where the poor readers in the vocational high schools and schools in lower quality housing areas are not given formal algebra and mathematics and take less over-all mathematics.

Figure 10-20 shows the relationship between 12th grade means in Reading Comprehension and in English Total for the groups of schools. Here again Group 10 stands out noticeably from the rest of the schools and this is in the direction of being lower in English than in reading. This means that Group 10 under-performs in reading as compared to Abstract Reasoning, and further, under-performs in English as compared to reading. This is likely to reflect the fact that the vocational curriculum places less emphasis on reading and English than do other curricula.

Figure 10-21 shows the relationship between school group means in Abstract Reasoning and English Total. Here is seen a strong tendency for high English achievement to be associated with high Abstract Reasoning scores and vice versa. One striking exception to this general tendency is Group 10 -- vocational schools. The vocational schools tend to have very low English achievement as compared with their level of Abstract Reasoning scores corroborating the findings of Figure 10-20. All four of the Southeast groups tend to be somewhat higher in English achievement than Abstract Reasoning. All of this may represent the results of different degrees of emphasis on the teaching of formalized English and spelling.

Figure 10-22 shows the relationship between the average English Total score for Grade 10 and the average English Total score for Grade 12 for each of the 17 taxonomy groups. The relationship here is a high one and there are no pronounced tendencies for any groups of schools to be significantly better or worse in English at one grade level than another. The figure definitely indicates that those schools that are good in English in the 12th grade tend to be equally good in the 10th grade.

Figures 10-23 and 10-24 show the relationship between English achievement and scores in Mathematics II (Intermediate) and Physical Sciences Information respectively. The relationship between English and mathematics is even higher than the relationship between English and Abstract Reasoning. The vocational schools do significantly better in Mathematics II and in Physical Science Information than in English. However, there is little tendency for any of the other groups to be significantly better in English

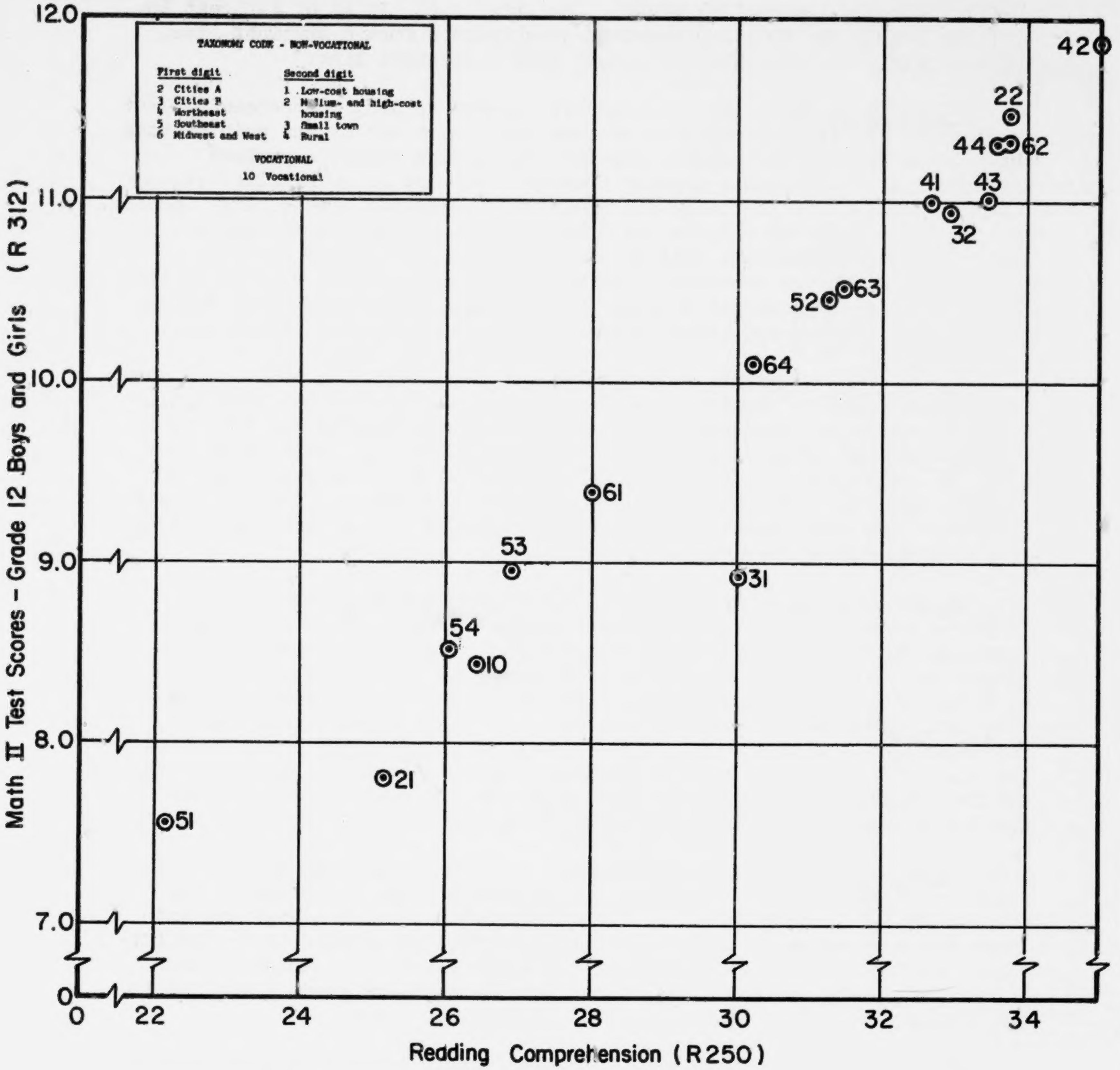

Figure 10-19. Reading Comprehension (R-250) test score means for Grade 12, and Mathematics II (R-312) test score means for Grade 12, plotted for each taxonomy group

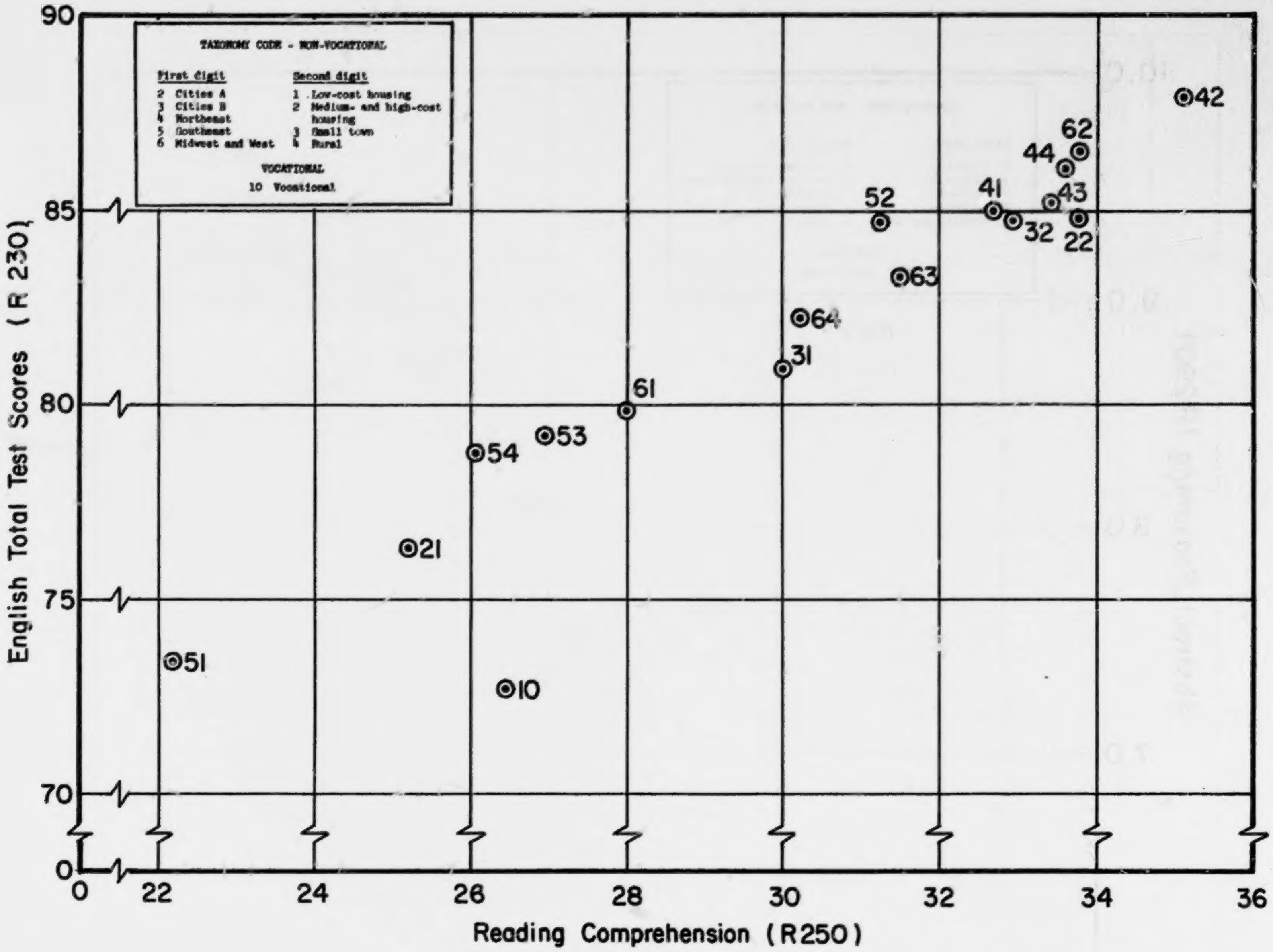

Figure 10-20. Reading Comprehension (R-250) test score means for Grade 12, and English Total (R-230) test score means for Grade 12, plotted for each taxonomy group

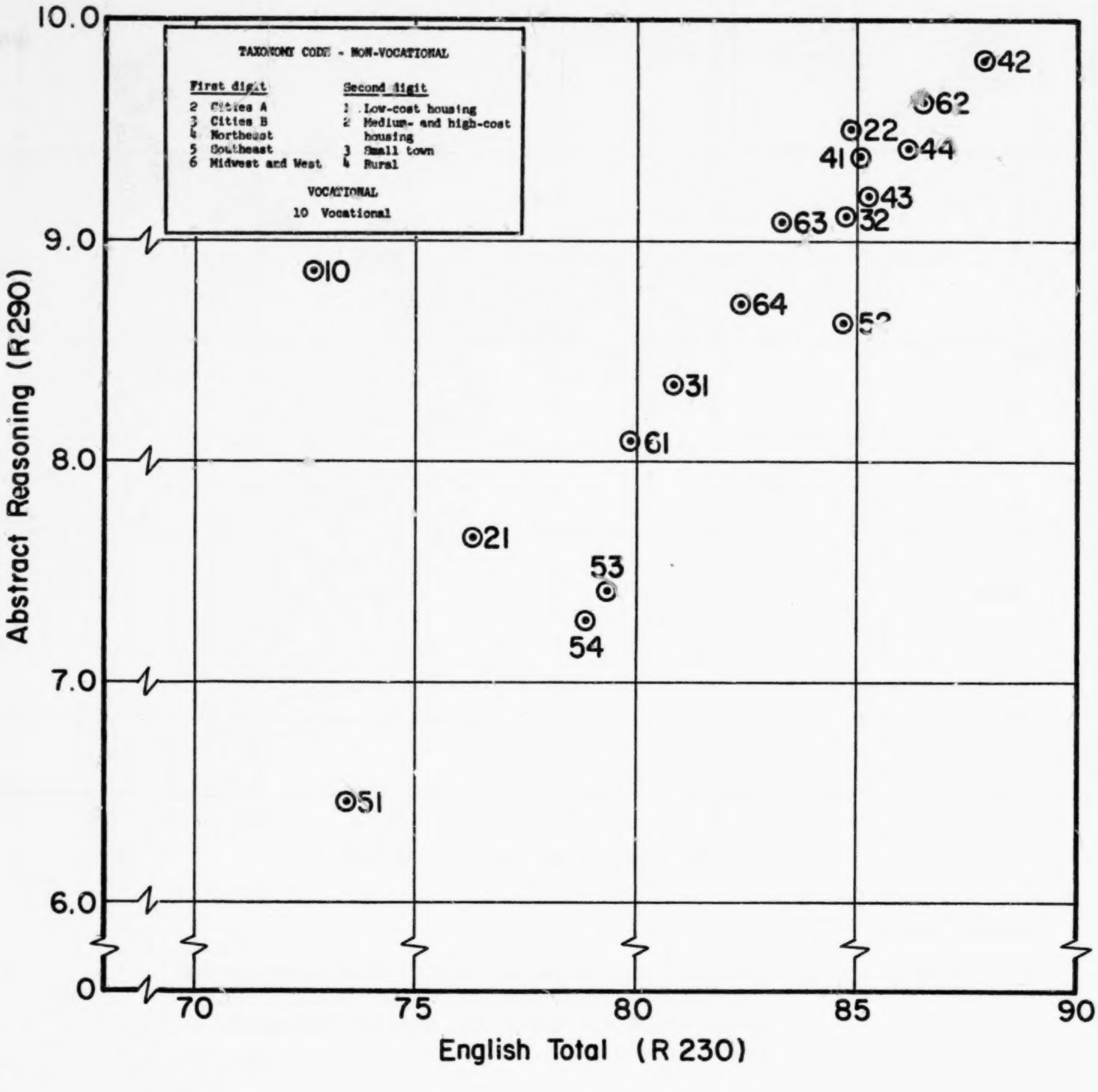

Figure 10-21. English Total (R-230) test score means for Grade 12, and Abstract Reasoning (R-290) test score means for Grade 12, plotted for each taxonomy group

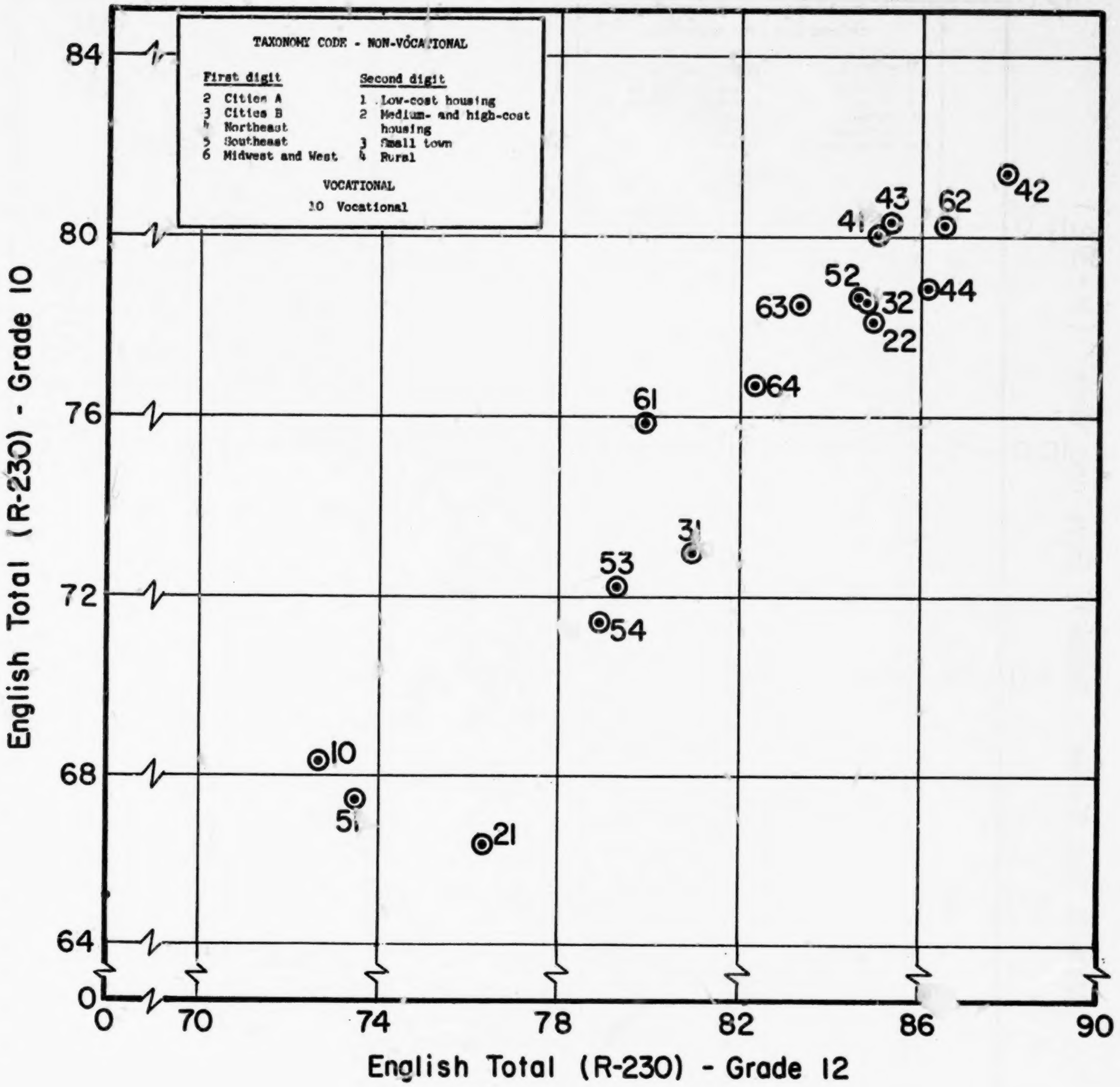

Figure 10-22. English Total (R-230) test score means for Grade 12, and English Total (R-230) test score means for Grade 10, plotted for each taxonomy group

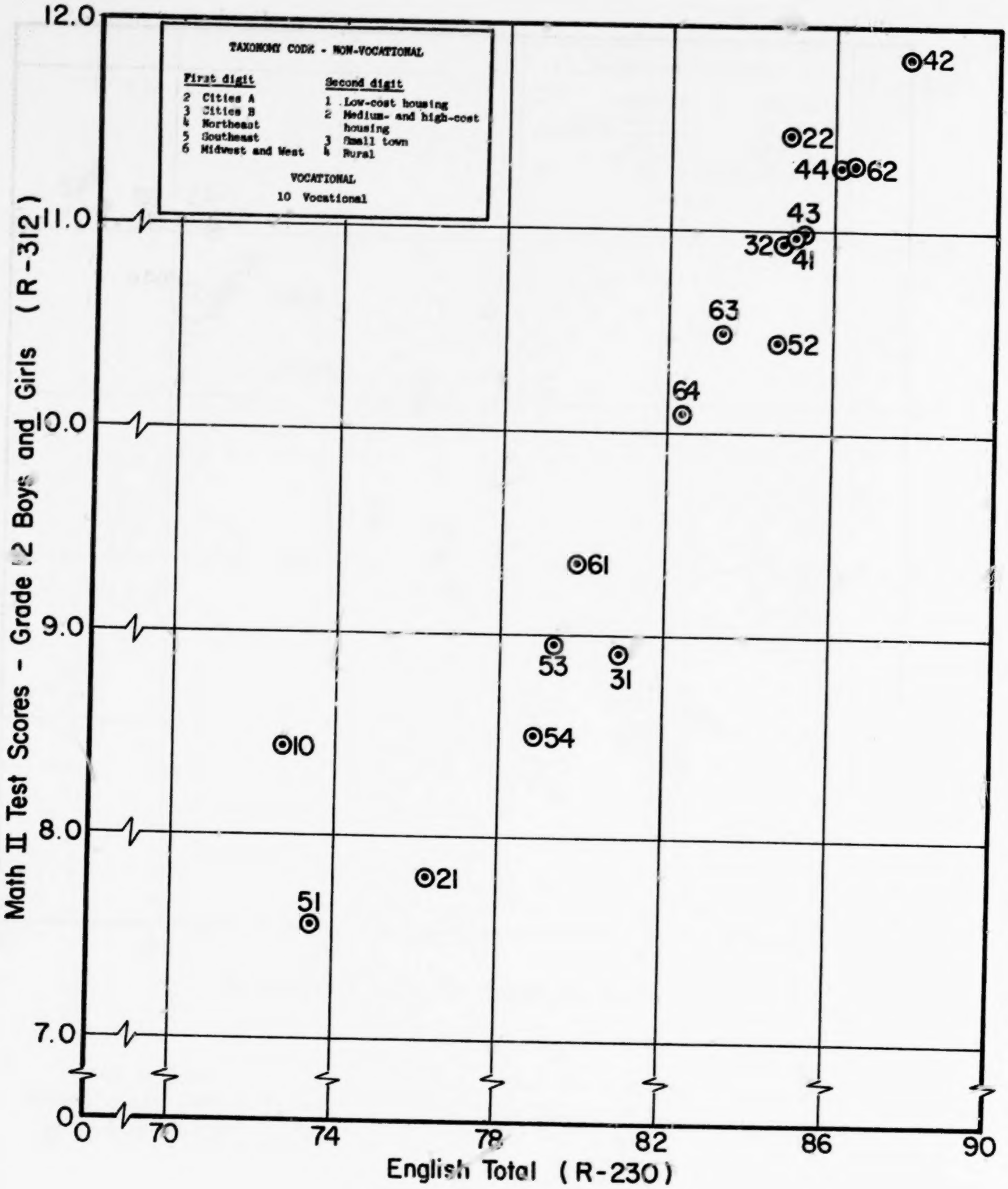

Figure 10-23. English Total (R-230) test score means for Grade 12, and Mathematics II (R-312) test score means for Grade 12, plotted for each taxonomy group

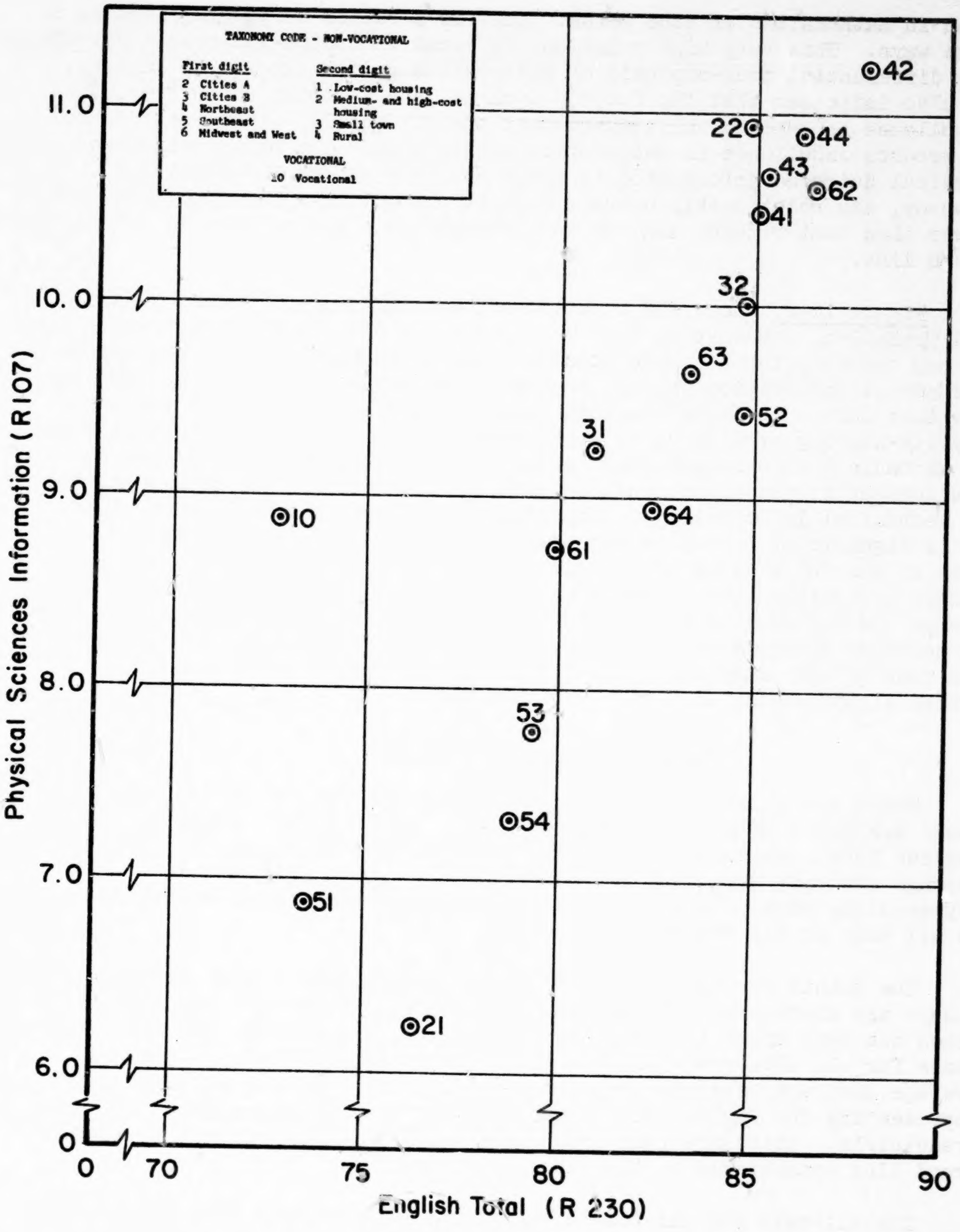

Figure 10-24. English Total (R-230) test score means for Grade 12, and Physical Sciences Information (R-107) test score means for Grade 12 boys, plotted for each taxonomy group

than in mathematics or vice versa. This is a rather surprising finding in some ways. This very high relationship seems to contra-indicate any tendency for differential over-emphasis of mathematics at the expense of English. It also indicates that the factors such as good teaching which help cause excellence in English achievement must operate equally within each school to produce excellence in mathematics achievement. The picture in regard to Physical Sciences Information is about the same as for Mathematics II. However, the relationship between English and Physical Sciences is a little lower than that between English and mathematics. Again Group 10 is off the trend line.

Figure 10-25 shows the relationship between English Total, Grade 12, and Mechanical Information Test mean for Grade 12. Here can be seen a very strong tendency for the vocational schools in Group 10 to be much better in Mechanical Information than in English. Of course this is to be expected. A rather more surprising finding, however, is that all five of the high-quality-housing area group of urban schools tend to be significantly lower in Mechanical Information than in English. It is hypothesized that the environment of the urban youth is such as to slow his rate of acquisition of Mechanical Information in comparison with other kinds of information. It is significant here that the points for the rural and town groups for each of the three major geographical areas are close together and form almost a straight line. This would again indicate that these pairs of groups are homogeneous and might well be combined. It also indicates that in terms of the pattern of interrelationships explored, all of the rural and town groups might be combined for some purposes even though they do differ significantly in level of achievement.

The Vocational High School

There are 35 vocational high schools in the Project Talent sample. These are shown as points in Figure 10-26. These points represent average English Total achievement score for Grade 12 plotted against each school's average Abstract Reasoning score for the 12th grade. Adjacent to the point representing each vocational high school is also indicated whether the school is all male or all female.

The points for each of the 17 public senior high school taxonomy groups are also given. These form an essentially straight trend line which has been drawn in. A point representing the average English Total means for all 12th grade boys is also entered and plotted against the average Abstract Reasoning score for senior boys together with the point representing the English Total mean and Abstract Reasoning mean for 12th grade girls. Lines are then drawn from these two points parallel to the trend line established by the taxonomy groups.

The all-male and all-female vocational high schools form two entirely different groups of points on the chart. Each group shows a relatively high relationship between the Abstract Reasoning and English Total scores, but the two trend lines are a considerable distance apart and are essentially parallel. It can be seen that the points for the vocational high schools

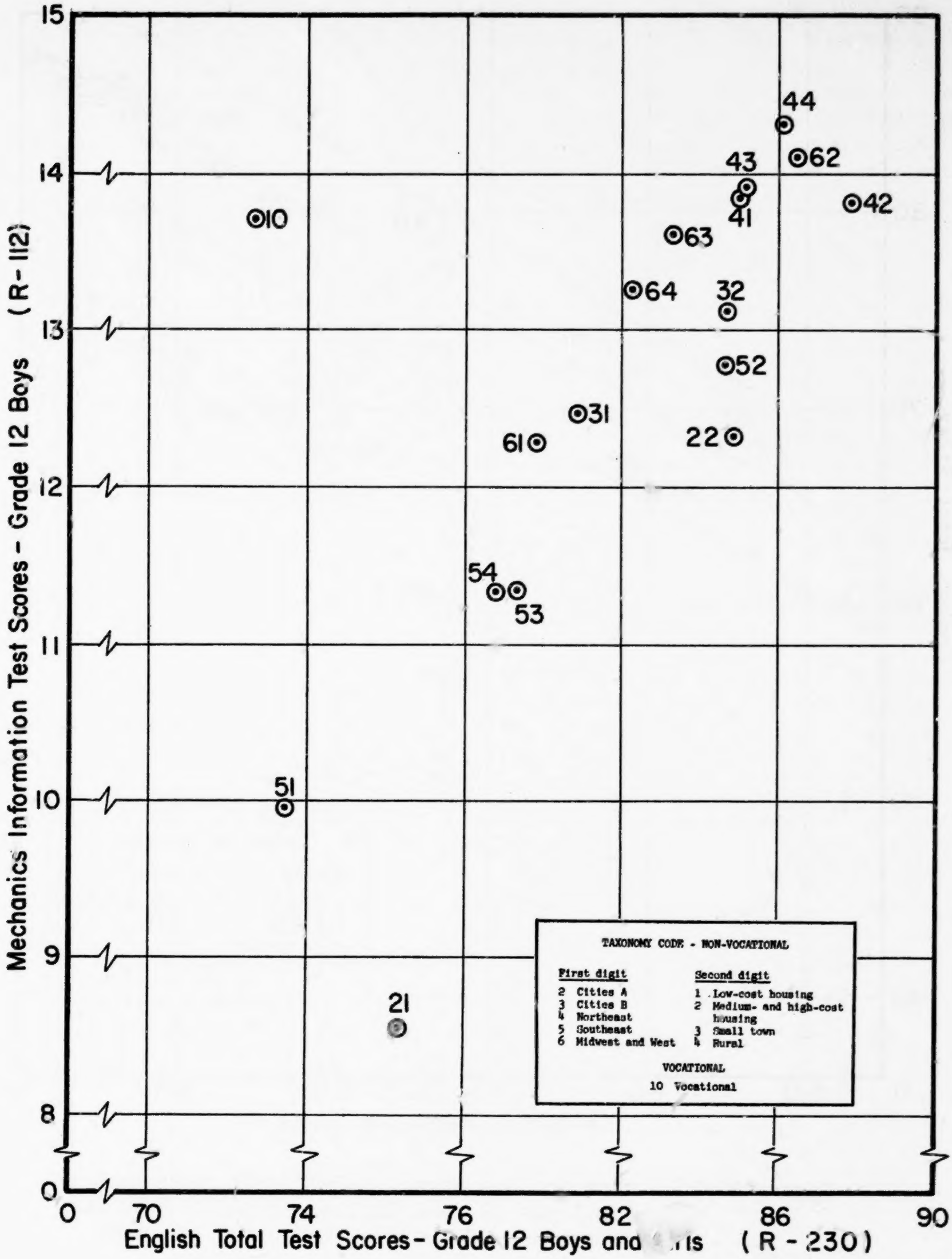

Figure 10-25. English Total (R-230) test score means for Grade 12, and Mechanics Information (R-112) test score means for Grade 12 boys, plotted for each taxonomy group

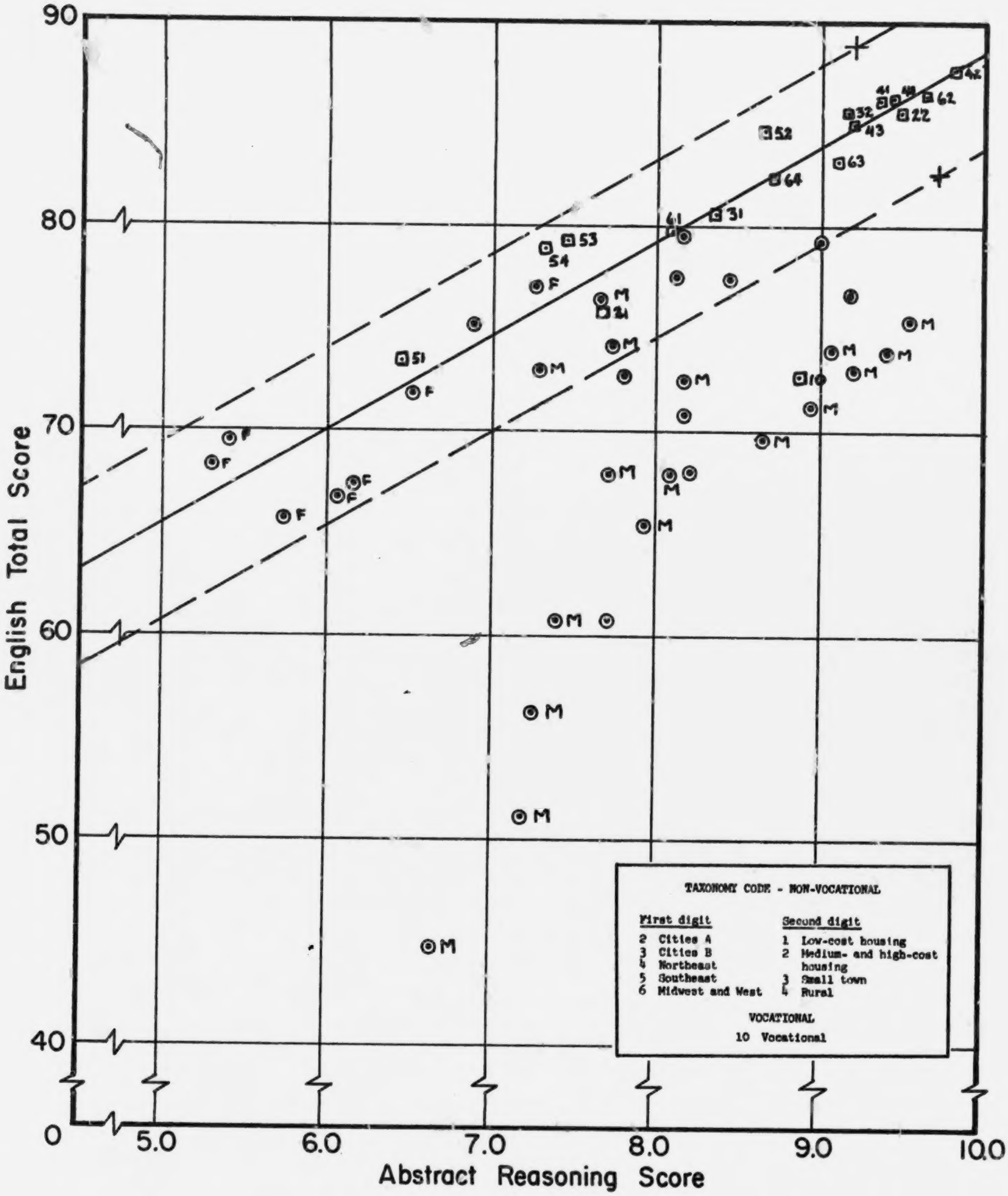

Figure 10-26. Abstract Reasoning (R-290) test score means for Grade 12, and English Total (R-230) test score means for Grade 12 plotted for each vocational school

that are co-educational fall in between the all-girl and the all-boy schools. Consistently, at all levels, the vocational high schools, considering their sex ratio, tend to be lower in English Total relative to Abstract Reasoning than do the other groups of schools, and than do 12th grade students as individuals. The means for the Group 21 (large city, poor quality housing area) schools make a point almost exactly on the trend line showing no under-performance at all in English as compared with Abstract Reasoning. The all-girl vocational schools seem to under-perform in English somewhat less than do the all-boy vocational schools. This may be largely a sex difference, but it also is probably partly because the students in the all-girl vocational high schools take much more commercial English, stenography, and the like, and actually have considerably more exposure to language training and language-type training than do the boys.

A considerable proportion of the vocational high schools have relatively low Abstract Reasoning mean test scores. The mean scores in other specific aptitudes such as visualization or mechanical aptitudes are also low, and it is doubtful that a high proportion of such low test performance students are really trainable in skilled trades training programs. It is possible that placing low Abstract Reasoning test scoring students in industrial skill training programs beyond their depth merely lessens their eventual level of performance in basic educational skills and language skills, without giving them a trade skill that will make them employable. In such cases such students might be far better off in a properly designed general high school course with emphasis on basic educational skills and general trainability and appealing to their specific aims and values.

The test score patterns of many of the vocational high schools indicate that perhaps as many as one-fourth of their students have academic aptitudes equivalent to those of students in many other schools in many parts of the country who enter college, and even graduate from college. It has been found that the Northeast states tend to have a considerably smaller proportion of their talented youth enter college than do the Western and Far West states. While most of this is probably a function of the pattern of distributions of junior colleges and low cost state colleges, an important part of it might also be the greater emphasis on vocational high schools in the Eastern states. Of course, it is not necessarily a waste of his talents when a talented youth goes into a high school high-skill training program and succeeds at it instead of going to college. Nevertheless, this does show up in the gross statistics in terms of so-called talent waste of college-capable youth who do not enter college. One thing shown by the Project Talent data is that those youths who have the requisite talents to acquire a high degree of occupational skill normally also have sufficient academic talent to qualify for entry into many colleges, and become college graduates. It is indicated that the youths who have very low ability to do ordinary academic high school work, and who are very poor readers are very unlikely to be trainable to a high-skill level in industrial specialities. Of course, many youths may have only marginal academic talent but have a high degree of special occupational talents. They might be better off and their talents better used in a high-skill industrial speciality than in a generalized college course.

It is most interesting that the Creativity test turns out to be a very strong suppressor variable with substantial negative weight in the multiple regression study of school characteristics and test scores versus the percentage of the graduates of vocational high schools and city schools who enter college. It is hypothesized that this is because the Creativity test in part measures the ability to do mathematics, and yet the students in the vocational high schools are not given mathematics and are diverted from going to college. Thus, a school with a Creativity test mean which is substantially higher than mathematics achievement test mean is likely to be a vocational high school with a very low college attendance rate.

It is indicated that the vocational high school area might profit from sweeping re-evaluation and review. It is probable that the basic rationale of vocational high schools for providing high school terminal courses has become obsolete by the rapid progress of American society towards a point where practically all trainable youth will have at least one or two years of education beyond the high school level. Because of increasing automation and complexity of industry, it is also probable that each youth with a trade skill is likely to have to be retrained two or three times during his career. The day is past when industry has a strong demand for high school trained youth with very narrow occupational skills such as drill press operator. It is even possible that many vocational high schools, as they now exist, might well be replaced by or be converted into post-high school technical institutes for trainable youth for highly technical programs through the 14th year. Perhaps such programs might start in the 10th or 11th year. It is probable however, that the emphasis up through at least the 10th grade should be on giving students the basic fundamental educational and basic technical skills necessary to be trainable in a variety of skill-type programs. It may be particularly important for poor readers and students near the functional illiteracy level to have redoubled emphasis on language skills and reading training in secondary schools rather than being diverted to a trade school with practically no emphasis on language skill development and use.

One immediate reform should be the end of the policy of using many of the vocational high schools as dumping grounds for the untrainable and the intractable. The "proof of the pudding", however, will be the Project Talent follow-up which is to be completed very shortly. This will show whether those students who have been trained in narrow vocational curricula turn out to be employable and get jobs that are relevant to their high school vocational training courses. Comparisons are going to be made between comparable groups of youth who have had vocational training versus training in a comprehensive or academic curriculum.

If the marginal talent level youth are to be retained in the comprehensive high school rather than the vocational high school, a program should be undertaken to develop special academic materials for them consistent with their values, aims, and skill level. This will be necessary in order to give them a meaningful and stimulating program, at their level which can bring them up to a functional literacy level and general trainability level that can qualify them for semi-skilled training or the like in industry and/or the Armed Forces.

Conclusions

The plotting of pairs of means for 17 homogeneous groups of public high schools makes it possible to detect complex relationships between various school characteristics and school outcomes with the rural-urban factor, socio-economic status, region, and the factor of vocational versus other type school held constant. This in effect "partials out" these factors. This is equivalent to a residual plot showing simultaneously the interactions of six different variables. Twenty-six figures of this sort were presented.

In general, the various two-way plot analyses for 17 taxonomy groups confirm and support the conclusions from the multiple regression analyses. In some cases they help to illuminate some multiple regression results that seem difficult to interpret from the correlational approach alone. A good example of this is the finding that per cent of parents in PTA has a high unique association with English achievement test score means for the combined group of vocational high schools and large city comprehensive high schools. From the appropriate two-way plots it can be seen that the vocational high schools are relatively low in English achievement as compared with their Abstract Reasoning test performance and are also lower in PTA membership than the large city comprehensive high schools.

The following conclusions seem warranted on the basis of the two-way plot analyses:

1. Abstract Reasoning test means for groups of low cost housing schools are considerably lower than for better quality housing schools in the same cities or areas. An exception to this is the group of four low cost housing schools for small cities in the Northeast. These schools score lower than the analogous Northeastern better quality housing schools but compare favorably with the other groups of better quality housing schools.

2. Quality of housing has little relation to per-pupil expenditure. It has a low relationship with size of senior class for the entire group. However, the schools in very large cities in areas with better quality housing have nearly twice as large senior classes, on the average, as the schools in low cost housing areas in the same cities. Most of the extremely large high schools in the country are from higher quality housing areas.

3. School mean scholastic achievement shows a moderate degree of relationship with per-pupil expenditure, but some low expenditure-better quality housing groups have high achievement and other high expenditure-low cost housing groups have low achievement. High expenditure rates do not seem to be a necessary prerequisite for obtaining high achievement. Other factors can compensate for lower expenditure rates in some cases.

4. Rural and small town taxonomy groups for each of the three areas tend to cluster closely with each other within the area on all the charts. This indicates that the rural and small town schools for each area can justifiably be combined in many future analyses.

5. In intermediate size cities there is a much higher delinquency rate for the low cost housing schools, while both the low and higher cost housing schools in the very large cities have low delinquency rates. However, the vocational schools, which are numerous in the largest cities but not in intermediate size ones, have a high delinquency rate. The behavior cases are perhaps diverted from low cost housing comprehensive high schools to the vocational schools in some way.

6. There is a high negative relationship between proportion of students in a general curriculum and Reading Comprehension test mean score.

7. With aptitude level held constant, urban-better quality housing school groups tend to do better than predicted for per cent of boys entering college except in the Northeast. The Northeast area school groups as a whole tend to have a lower college entry rate than for comparable schools in other parts of the country.

8. There is a very high relationship between achievement in English and achievement in mathematics.

9. All of the urban-better quality housing area groups tend to be significantly lower in Mechanical Information than in English. It is hypothesized that the environment of the middle-class urban youth is such as to slow his rate of acquisition of mechanical information in comparison with other kinds of information or subject matter. As would be expected, the vocational schools do especially well on the Mechanical Information Test.

10. The vocational high schools are near average in mean Abstract Reasoning Test score but are the poorest group of all in English. They also tend to be lower on the Reading Comprehension Test than on Abstract Reasoning.

11. The test score patterns of many of the vocational high schools, where less than 10% of their boys go on to college, indicate that perhaps as many as one-fourth of their students have academic aptitudes equivalent to those of students in many other schools in many parts of the country who enter college, and even graduate from college.

Chapter 11

CONCLUSIONS

After completing the preliminary analyses of the Project Talent data for approximately 800 public senior high schools nationally representative of the entire country, it is possible to make certain tentative conclusions.

Levels of Achievement and Performance in Schools Vary Markedly

Nearly all the students in some high schools achieve at a relatively high level, while the opposite is found in other schools. The range in average achievement for the students in specific schools is from about the fifth percentile to nearly the 95th percentile for individuals. On most achievement tests the standard deviation for school means is about 60 per cent as great as the standard deviation for scores of individual students. Since high schools all tend to grade on the same curve and assign about the same grades, class rank will have relatively little absolute meaning as an indication of level of preparation for college work. The upper three-fourths of the graduates of some schools will be better prepared than will the upper quarter or even upper tenth in many other schools. This raises a difficult problem when high school class rank is used by a given college as a screen for entry unless the college draws from only a very homogeneous group of high schools.

High Schools Can Be Grouped into Types of Very Similar Schools

It has been found that many schools show a surprising degree of similarity in many important characteristics. While schools differ in hundreds or even thousands of ways, many of these differences do not appear vital to the accomplishment of many of the usual outcomes of the schools. In other more basic ways the schools differ a great deal in terms of the circumstances under which they operate, the ways they are organized and operate, and the results they get. However, it has been found that there are large groups of schools that are very similar to each other and that it is possible to divide all of the public high schools into as few as 17 homogeneous groups.

Schools Are Typed According to Region, Rural-Urban Status, Quality of Housing, and Whether a Vocational School

After investigating a number of bases such as school size, location, socio-economic status as measured by the quality of housing of the area served by the school, rural-urban status, and vocational versus comprehensive high schools, for the formation of comparable groups of schools, the best of the available factors for this purpose seems to be those of region, rural-urban status, and quality of housing. Sixteen of the groups represent combinations of the above three factors. The vocational high schools form a separate 17th group. It is interesting that the regional factor only required a three-way split. Regional differences are greatly minimized when socio-economic factors and rural-urban factors are held constant.

These 17 groups of schools seem to be very useful in presenting census or survey data about schools. Instead of just presenting information about the characteristics of the average school in the United States, it then becomes possible to present such data about groups of similar schools. It has been found possible to present school census data in terms of one characteristic compared with another. For example, it is possible to report information about expenditure levels of the schools in relation to size or to other important school characteristics. When this is presented separately for the 17 taxonomy or classification groups, it is possible to see in one presentation the interrelationships between two important school characteristics and also rural-urban status, quality of housing, region, and vocational high school status. By this method, it is possible to see many trends and relationships impossible to see when data are reported only in terms of national trends.

Many Important School Outcomes Have Been Measured -- English, Mathematics, Information, College Attendance

It has been found possible to obtain useful quantitative measures of many important school outcomes, including measured achievement in various subject matter areas as well as documented principals' reports of such outcomes as college attendance, dropout rate, absenteeism, and delinquency rate. Most of these measured school outcomes have relatively high unique relationships to membership in a given taxonomy group and also with a very few of the school characteristics as determined from the principals' reports. These outcomes have relatively low unique relationships to a host of other school characteristics from the school questionnaires. Of the several hundred measured characteristics of schools investigated, as few as a dozen seem to account for most of the variations in school output among schools.

It Has Been Found That Performance of School Graduates Is Highly Related to Types of Students Entering Each School

The average achievement test scores of a school will be very highly related to average scores on such non-curriculum-linked and non-language tests as the Abstract Reasoning test, which is a non-verbal general scholastic aptitude test. This test in turn is relatively closely related to the characteristics of the community and also especially of the family. There is a high relationship, for example, between the Abstract Reasoning test scores of the students and such family characteristics as occupation of the father, education of the mother, and quality of the housing. This is probably relatively well known intuitively by observers of our schools as well as by the school administrators themselves. This is why most people feel that it is impossible to make fair comparisons of schools because "it all depends". They feel that one school cannot fairly and directly be compared with another in terms of the number of National Merit scholars it produces or its average College Board scores or the per cent going to college or even the amount of English or mathematics that the students learn.

Schools Can Be Compared Fairly with "Yardsticks" If Compared with Similar Type Schools

However, Project Talent has obtained adequate measures of many of the important "it all depends" factors, and by holding them constant it is possible to make legitimate and fair comparisons of schools, even though these schools operate under different conditions and in different situations. The 17-group taxonomy classification system does this in conjunction with classifications on such non-curriculum-linked tests as the Abstract Reasoning test. Distributions of school means are available for each of the 17 groups, showing the relationship between Abstract Reasoning level and achievement in various areas for each of the schools. Thus it is possible to evaluate a school in terms of how much achievement it is obtaining as compared with other similar schools with the same level of Abstract Reasoning. With this approach it may be found that a slum school, with low achievement, low college attendance rate, etc., may actually be doing a better-than-average job in achieving learning objectives as compared with similar schools in the same situation, whereas a suburban school, with high achievement and high college rate, may actually be performing at a below-average level as compared with similar schools dealing with similar types of students. Project Talent has indicated that it is possible to develop fair and useful yardsticks for selected school outcomes. It will be possible to develop both absolute and relative yardsticks of this sort. An absolute yardstick would be one in which the performance of seniors, for example, could be compared with the performance of ninth graders or those in other grades on a national basis, and also in some cases in terms of absolute level of performance in reading, vocabulary, spelling, etc., in which the tests actually sample some domains of reading material, spelling words, or vocabulary words. Relative yardsticks could also be practical and feasible and these would provide a measure of how well the school is achieving its outcomes as compared to how well other schools of a similar nature are achieving the same type of outcome.

"Yardsticks" Are Not "Standards" -- They Measure the Achievement of Standards

It should be emphasized that the yardsticks are not standards. They are the way to see if standards for desired objectives are being met.

Standards or goals for levels of performance would be established by the local school system. There are of course many objectives of the schools that cannot now be measured and as a result it is not possible to tell whether such objectives are being met at all. Nevertheless, these may be very legitimate and important objectives. On the other hand, the attainment of other objectives such as basic achievement in certain areas, and the development of basic educational skills such as reading and arithmetic, can be checked against the yardsticks of properly designed tests of achievement.

School Size

How do large schools differ from small schools? Are large schools better than small schools? How large should a high school be?

The data from Project Talent shed some light on these questions. As for the first question, large schools differ from small schools in many ways other than in size. They tend to be in different places and to serve different kinds of students. This tends to make the apparent effect of school size very deceptive. What one might think is the effect of size might really be due to differences in the effect of rural versus urban communities or regional or socio-economic differences. However, grouping the schools into homogeneous groups according to the Project Talent classification system makes it possible to see the real effects of size in schools that are similar in location and socio-economic status. Within these groups it can be seen that the schools of different sizes differ mainly in the obvious ways--larger schools being able to offer more courses and more services and at a lower per-pupil cost, other things being equal. However, this greater efficiency of larger schools in terms of the number and variety of programs they can offer at a given per-pupil expenditure level may disappear if student transportation costs become excessive. Thus the optimal size of school from a cost standpoint might well be relatively small when population dispersal is extreme.

There seems to be no evidence that size per se is a necessary prerequisite for excellence of student outcomes. Many schools can be found at any size level that are achieving excellent results in terms of basic achievement in English and mathematics, and the rate at which graduates enter college, for example, and many large schools can be found with low achievement and low college entrance rates. Those students scoring well on the Abstract Reasoning test tend to do well in basic skills regardless of school size. In similar locations, the students at a given level of college aptitude are also about as prone to go to college in small as in large schools, a very important factor here being the availability of a low-cost local college.

Determining the best size for a given school will depend heavily upon local factors, and especially upon population concentration and the distance that students must be transported. Under some conditions a high school with

50 seniors with a given program could be more effective and efficient than one with 100 seniors and the same program. This would be under conditions that cause it to be cheaper to hire extra teachers and have new programs at that size than it would be at the larger size where transportation costs might be as much as $200 per student per year or higher and where the students might have to spend as much as two hours per day riding school buses.

It would seem that larger school size is a proper and important objective in order to provide a greater variety and depth of course offerings and to make available special services such as grouping, acceleration, guidance, etc.

In summary, the educational outcomes associated with a school are much more related to the quality and type of students it serves than to the size of the school or most of its specific educational policies or practices. Size of school is very important insofar as it controls course offerings and services. The decision as to whether to increase school size or to provide these courses and services through other means, such as hiring extra personnel, is one which must be based on a careful analysis of local factors and costs.

The Slum School and Suburban School

It is rather difficult to define the slum school, but for our study it might be regarded as being equivalent to the schools in poor quality housing areas in cities of 250,000 or more population. The big city slum school would be in cities of 1,500,000 or more population, which is School Group 21 in our classification. A typical school in Group 21 has perhaps 90 teachers and 2000 students. Its average class size is about 29 or 30. Schools in better quality housing neighborhoods in the same size cities have about 33 or 34. The slum school is also less likely to have students on double shifts. Thus the image of the slum school as being more crowded than more favored schools in the same cities is not an accurate picture.

As compared with the urban schools in more favored neighborhoods, the very large city slum school building is somewhat older but has been more recently renovated. However, the poor quality housing schools in smaller cities tend to be newer and also more recently renovated. In the slum schools the teachers are just as highly paid as are those in better quality housing schools in the same large cities. Their teachers average as much experience and as many such schools are fully certified by the state. However, there is more teacher turnover and fewer teachers with advanced degrees.

The students in the comprehensive high schools serving slum areas average lower achievement in school subjects and average lower on aptitude tests. However, their relative average achievement in English and mathematics is just as high as that of students in the other large city schools when achievement level is adjusted for non-verbal scholastic aptitude as measured by the Abstract Reasoning test. Analysis of the pairs of means for the comprehensive high schools from poor housing areas shows no evidence of under-performance as relative to abstract reasoning ability. It would appear that such talent as the poor quality environment permits to emerge may be adequately developed by the schools in our large cities. If true, this is a tribute to the strenuous efforts of our large city school administrations to equalize opportunity in all of their schools regardless of location. Efforts to equalize quality of home and social environment have not been nearly as effective as have efforts to equalize school environment in our cities.

Guidance and Counseling Programs Can Be Meaningfully Documented and Compared to Professional Standards

This study placed major emphasis on surveying current practices, personnel, and functions of guidance programs. Information on these broad dimensions of guidance and counseling programs may then be compared to standards recommended by the profession. This has been done for counselor personnel, duties, and functions performed in serving students' needs.

The Growth of Guidance Programs and Changes in Guidance Programs in Public Senior High Schools Have Been Measured

Estimates have been provided for the proportions of schools that have instituted guidance programs, the length of time these programs have been in existence, plans for instituting new programs, and plans for increasing guidance and testing services. The relationship of the National Defense Education Act to the institution and expansion of guidance programs was documented and discussed. Base-line data were provided for guidance programs and counselor personnel against which future studies can be compared.

Guidance and Counseling Programs Can Be Grouped by the Same Type of Taxonomy System As Was Used for Schools

Grouping the guidance programs by the taxonomy system has the effect of controlling for U.S. Office of Education region, rural-urban location, socio-economic level of the area (housing quality), and the type of high school (vocational versus general comprehensive). Grouping the schools in this way also permits generalization of results to meaningful sub-populations. It is recognized that this grouping controls the external factors that are largely beyond the control of the school or the guidance program. Introducing within this context data on student-counselor ratios, on the functions performed by the guidance program, and on the intellectual and background characteristics of the students should provide a more useful basis for conducting research on the relationship of guidance program functions to serving student needs and to evaluating the effects of guidance.

Guidance and Counseling Efforts Vary Greatly in the Different Schools

Having a guidance program, the number and qualifications of counselor personnel, guidance facilities and sesources, duties performed, and communication efforts differed according to the size of the senior class, U.S. Office of Education region, rural-urban location, city size, and socio-economic level of the neighborhood (quality of housing). For example, it was found that for larger schools as compared with smaller schools, a larger proportion had guidance programs and had had guidance programs for a longer period of time; resources and facilities were more favorable (such as adequate clerical assistance and the guidance budget); more and better trained counselors were available; and a greater variety of methods was used to impart information to the students. Differences associated with Office of Education region, rural-urban location, city size, and socio-economic level are shown in the taxonomy group analysis in Chapters 7 and 8.

Having a Guidance Program and the Age of the Program is Associated with Using Standardized Tests and with a Greater Number of Efforts Being Made to Communicate Educational and Occupational Information to Students

The evidence appears to show that schools having had a guidance program for a period of time (1958 or earlier) use a greater number and variety of tests and have a greater number of purposes for which tests are used. In addition to testing, the informational function of guidance is stressed. Printed matter on occupations, colleges, and military service is more often available in schools which have had guidance programs for a period of time. These schools with guidance programs also tend to use a greater variety of methods for presenting information to students on college, scholarships, occupations, and the military service.

The Major Duties Carried Out by Counselors Appear to be Educational Rather than Vocational or Personal

The educational problems encountered by counselors most often are planning high school programs, problems with regard to low grades, college planning, and planning for other training after high school. Vocational counseling appears with lesser frequency than does educational counseling. Placement received relatively infrequent mention. It appears, too, that those personal and personality problems that are dealt with are largely day-to-day interactions of students with teachers and among students rather than with personality development.

Counselor-Student Ratios and Counselor-School Ratios were Calculated and Compared

Information was obtained from the Guidance Program Questionnaire and from the Counselor's Questionnaire on the number of counselors. The data from these two sources were used to compare counselor-student ratios and counselor-school ratios. The results appear to show that estimates of full-time counselor personnel obtained from the Guidance Program Questionnaire (completed by the person in charge of guidance or by the principal) were most comparable to the Counselor's Questionnaire estimates of persons spending 70 or more per cent of their time in counseling and guidance. It appears, too, that estimates of part-time counselor personnel from the Guidance Program Questionnaire include a large number of persons spending less than 20 per cent of their time on guidance duties. Presumably, these are teaching personnel rather than counselors. Counselor-school ratios probably do not serve as accurate indicators of the availability of counselor personnel to individual students, inasmuch as the schools vary a great deal in enrollments. However, the counselor-school ratio may be used as an indication of the extent to which schools are minimally staffed. The student-counselor ratios obtained from the Counselor's Questionnaire do not compare favorably (498 to 1 for counselors with a graduate course in counseling; 738 to 1 for full-time equivalent counselors; and 1,316 to 1 for those with a graduate course in practicum) with the recommended ratios of 300 to 1 or 250 to 1. The ratio of students to counselors with a graduate course in practicum was the least favorable of all those calculated and suggests the need for additional training.

Counselor Personnel are Products of the Educational System

Only a very small proportion of the counselors did not have teaching experience. A very large proportion had had more than ten years of teaching experience. In addition, the majority of the counselors also taught or did administrative work.

The Formal Training of Counselors Tends to be Minimal in the Critical Counseling and Related Areas

Only 17 per cent of the counselors had a course in practicum, less than one per cent held a doctorate degree, and many of those holding the master's degree did not appear to hold that degree in counseling.

It is Possible to Study the Effectiveness of Guidance Program Efforts with the Data from the Guidance Program Questionnaire and the Counselor's Questionnaire

The data from the Guidance Program Questionnaire and the Counselor's Questionnaire may be thought of as predictor variables in a predictor-criterion equation. It is planned to organize these data in such a way that they might be effectively related to various student criteria such as educational and vocational choices, staying in college, and entering into an appropriate occupation. The arrangement of the data by taxonomy groups permits control for location (region, rural-urban status, and city size), and socioeconomic factors (housing quality). It should be possible to study relationships between student-counselor ratios and effects on the student body. In this way empirical evidence may be brought to bear on optimal staffing arrangements for guidance programs.

The Use of Tests in Public High Schools

A very extensive section of the Guidance Program Questionnaire concerned the school's use of tests. The results from the Questionnaire were tabulated according to the 17 taxonomy groups. These questionnaires were filled out by the school counselor or other staff member responsible for guidance. Of the 808 public senior high schools from which we received replies 635, or 79%, responded that they had guidance programs. Of those schools which answered that they had guidance programs in their school, over 90% said that their counseling, guidance, and testing had been increased in recent years. The majority of these, especially outside of the large cities, indicated that it had been in the past two years--that is, two years before the Spring of 1960. The same situation was found in regard to the use of tests. Nationally, over 90% of the schools with guidance programs indicated that they were making greater use of standardized tests. Overwhelmingly it was reported by most schools that they had increased their participation in state, national, and regional testing programs, had increased the tendency to keep detailed records of students' progress, and are making more effective use of test results.

An overwhelming majority of the schools indicated that they plan to increase their use of standardized tests. Of the small number not saying that they plan to increase their testing, most are doing a great deal of testing now and perhaps do not need to increase their use of standardized tests. There seems to be little or no visible reaction against the use of standardized tests. Nearly all schools also thought that they were making more effective use of tests than they were two years earlier.

The survey results fail to show any evidence of a reaction against the use of tests. There seems to be a strong trend toward increased use of tests together with strengthened guidance programs and the belief by the schools that they are using test results with greater effectiveness. It was found that the policy of reporting test scores to parents is associated positively with the reading level and housing quality of the area served by the school. Schools' patterns of test administration, use, and interpretation show many significant relationships with such factors as region, rural-urban status, and socio-economic factors as reflected in the 17 taxonomy groups of high schools.

Cause and Effect in Education

Statistics do not Prove Cause and Effect

It is not possible to prove cause and effect relationships from Project Talent data or any other similar statistical data based on relating past measures of behavior with each other. For example, it is not possible to prove unequivocally by statistical survey methods that higher teacher salaries cause higher school achievement. On the other hand, it is possible to do analyses that make it appear quite likely that these higher salaries may be one of the most important factors in obtaining higher achievement. At the same time, it is possible to use equivalent methods to indicate that it is extremely unlikely that size of school as such is a necessary prerequisite for high achievement because there is no associational evidence at all in this direction. A given factor is extremely unlikely to be a causative factor if it shows no unique validity for the target behavior or criterion in a comprehensive set of data where the other important factors are being held constant. It is possible to deduce with much more confidence that things are not likely to be causative factors than it is to deduce that they are causative factors. We could conclude, with some confidence, that higher salaries would likely cause more learning in the long run, but we could predict with a great deal more confidence that an increase in the average size of school would be very unlikely by itself to have an important effect on most school learning.

Factors that seem Likely to be of Prime Importance in Achieving School Outcomes

The Project Talent data to date indicate that four of the most important treatment factors closely and uniquely associated with school outcomes such as achievement and going to college and staying in school are:

a. Teacher salaries
b. Teacher experience
c. Number of books in the school library
d. Per-pupil expenditure

These four factors remain important even after region, rural-urban status, and such socio-economic factors as median family income and quality of housing are held constant. It is possible that teacher salary schedule may be a good general indirect index of teacher quality. A school with a salary schedule above average for its teacher recruiting area can have better teachers and hold them easier than a school with lower salaries.

It should be cautioned that we cannot conclude for sure that these factors are causing the differences in school outcomes. It may be that they are caused by some outside factors which are just being mirrored or reflected by these above measures. Nevertheless, their contribution is important even after as many as 30 of the most important school and community characteristics have been held constant in multiple regression analyses.

Factors that seem Less Likely to be of Prime Importance in Achieving School Outcomes

On the other hand, we can be much more confident in concluding that many other factors are not likely to be prime causes of school excellence since they do not have any sizable unique correspondence with school outcomes. The data in Project Talent indicate that some school characteristics seem very unlikely to be prime causes of school excellence of output. Among these seem to be:

a. School size
b. Average size of classes
c. Age of building
d. Suburban location

Out of the hundreds of school characteristics studied in the School Characteristics Questionnaires, a very few of them seem likely to be possible prime causes. At least the Project Talent data do not rule them out. If we were to make an analogy to a detective story, these would be the few out of hundreds of suspects that had the opportunity and motivation to commit the crime and cannot prove their whereabouts at the time of the crime. It will, of course, require experimentation to prove causation. Perhaps one of the most valuable payoffs of Project Talent data is to focus the attention on the factors on which experimentation might profitably concentrate and the factors most important to hold constant in well designed experiments.

School Innovations can be Assessed and Evaluated

Project Talent results do have a valuable payoff in support of experimentation and innovation since these results establish base-lines for expected performance under various normal conditions. One way to evaluate new innovations is by comparing the results obtained with the results that would be predicted on the basis of past practices and experience factors as well as by important situational factors.

Excellence in education seems to be caused by a large number of factors each of which contributes a very small fraction of the total. The effects of a moderate variation in any single one of these hundreds of school factors are difficult to assess. Project Talent has identified some of the factors which are associated with high levels of achievement on these tests. Further follow-up of the student prepared in these schools should enable us to clarify the components of the effective secondary school.

PROJECT TALENT

APPENDIX A

A National Inventory of Aptitudes and Abilities

SCHOOL QUESTIONNAIRE

General School Characteristics

NOTE

The figures in the boxes to the left of each question are the composite percentages for all high schools including public, parochial, and private. The estimates were obtained by approximately weighting of the questionnaire responses of schools participating in Project Talent.

General Directions:

Sections I, II, and III of the questionnaire should be filled out by the principal (or, if not available, the assistant principal or dean) of the school. If desired, Section IV, the checklist of courses offered by the school, may be given to an administrative assistant to fill out. Answers are to be marked directly in the booklet, in the spaces provided.

It is suggested that the principal should review such parts of the questionnaire as are not filled out by him in order to assure himself that no important information has been omitted.

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General Directions:

Place an "X" in the parentheses (X) in front of the answer you choose for each question. Be sure to mark only one answer for each question, unless the question specifically states that you may mark more than one. A few of the questions ask you to write in some numbers. Please write as legibly as possible. If you should choose the option "Other (specify)" for any question, be sure to mark an "X" in the parentheses as well as writing in your answer on the line provided. Thank you.

SECTION I - YOUR SCHOOL
About School Practices, Policies, and Plant.

1. Type of secondary school:

87.1	( ) 1.	General comprehensive high school
5.7	( ) 2.	Academic or college preparatory high school only
.1	( ) 3.	School specializing in commercial or office subjects
.1	( ) 4.	School exclusively for superior students
-	( ) 5.	School exclusively for slow learners
.9	( ) 6.	General vocational or trade educational high school
-	( ) 7.	School primarily for special talents (art, music, etc.)
.6	( ) 8.	Military academy
.2	( ) 9.	University school
.2	( ) 10.	School for the deaf
.1	( ) 11.	School for the physically handicapped (other than blind or deaf)
3.4	( ) 12.	Private "Preparatory" school (other than Military Academy)
.3	( ) 13.	School for emotionally disturbed
-	( ) 14.	School exclusively for non-English speaking
.4	( ) 15.	Other (specify)________
.8	16.	Junior High School

2. Grades included in your school:

43.5	( ) 1.	K-12 or 1-12	5.1	( ) 7.	8-12
-	( ) 2.	6-9	28.4	( ) 8.	9-12
.6	( ) 3.	7-9	6.8	( ) 9.	10-12
-	( ) 4.	7-10	.2	( ) 10.	11-12
12.7	( ) 5.	7-12	-	( ) 11.	11-14
-	( ) 6.	8-11	2.6	( ) 12.	Other specify________

3. Type of accreditation or official recognition:

2.6	( ) 1.	Regional only	1.3	6.	University
53.3	( ) 2.	State only	.5	7.	Religious
38.5	( ) 3.	Regional and State	.1	8.	City
1.5	( ) 4.	Other (specify)________	.2	9.	Option 6 7
1.6	( ) 5.	None	.5	10.	City and State

4. Does your school system have midyear admission to the first grade in the elementary school?

2.2	( ) 1.	Yes, on a regular basis
5.2	( ) 2.	Only in a few exceptional cases
75.9	( ) 3.	No, not at all
16.7	( ) 4.	Does not apply

5. Does your school have midyear promotions?

94.9	( ) 1.	Yes
5.1	( ) 2.	No

6. How many school days are there in your school year this year? (Write in on the line below.)

__________days

7. How many class periods a day does each grades 9-12 student usually spend in school?

-	( ) 1.	3 or fewer
3.1	( ) 2.	4
8.3	( ) 3.	5
41.5	( ) 4.	6
29.9	( ) 5.	7
17.1	( ) 6.	8 or more

8. What is the usual length of a class period for grades 9-12?

-	( ) 1.	30 minutes or less
-	( ) 2.	About 35 minutes
9.2	( ) 3.	About 40 minutes
21.1	( ) 4.	About 45 minutes
16.5	( ) 5.	About 50 minutes
53.3	( ) 6.	About 55 minutes or more

9. What size is your average instructional class in science and math (grades 9-12)?

.4	( ) 1.	5 or less	13.0	( ) 7.	21-23
1.3	( ) 2.	6-8	20.8	( ) 8.	24-26
3.8	( ) 3.	9-11	13.1	( ) 9.	27-29
5.5	( ) 4.	12-14	10.5	( ) 10.	30-32
10.1	( ) 5.	15-17	4.7	( ) 11.	33-35
15.0	( ) 6.	18-20	1.7	( ) 12.	36 or more

10. What is your average instructional class size in non-science courses (grades 9-12)?

1.4	( ) 1.	8 or fewer	17.3	( ) 7.	24-26
1.5	( ) 2.	9-11	18.1	( ) 8.	27-29
4.9	( ) 3.	12-14	15.5	( ) 9.	30-32
6.7	( ) 4.	15-17	9.1	( ) 10.	33-35
11.7	( ) 5.	18-20	2.0	( ) 11.	36-38
10.4	( ) 6.	21-23	1.3	( ) 12.	39 or more

11. What is the average amount of homework per day which a student in grades 9-12 in your school is expected to do?

1.3	( ) 1.	Students are not usually given out of class assignments.
7.6	( ) 2.	Less than 1 hour
57.9	( ) 3.	1-2 hours
27.1	( ) 4.	2-3 hours
5.5	( ) 5.	3-4 hours
.5	( ) 6.	4-5 hours
.1	( ) 7.	More than 5 hours

12. How many study halls or periods a week does the average grades 9-12 student in your school have during school hours?

9.1*	( ) 1.	None	32.6	( ) 6.	5
11.6	( ) 2.	1	3.9	( ) 7.	6
14.0	( ) 3.	2	6.9	( ) 8.	7
5.9	( ) 4.	3	4.1	( ) 9.	8
6.0	( ) 5.	4	15.1	( ) 10.	9 or more

13. For which of the following special groups does your school provide special, separate classes (grades 9, 10, 11, or 12)? Mark as many as apply.

21.8	( ) 1.	Low I.Q. or mentally retarded
1.3	( ) 2.	Behavior or adjustment problems, or record of delinquency
2.7	( ) 3.	Physical handicaps (specify which)________
3.3	( ) 4.	Non-English speaking
21.1	( ) 5.	Rapid learners
19.3	( ) 6.	Special skills or talents (e.g., art, music, science)
21.4	( ) 7.	Math difficulty
27.8	( ) 8.	Reading difficulty
11.1	( ) 9.	Speech difficulty
34.9	( ) 10.	Special provision for all (other) exceptional children is made within their regular class groups.
26.9	( ) 11.	All (other) exceptional children are integrated into regular classes without special privileges.
7.2	( ) 12.	Other groups (specify)____ (4.5 = English)____

14. Which of the following types of recognition for achievement are available in your school? Mark all that apply.

18.0	( ) 1.	Honors courses or other special classes
60.7	( ) 2.	Privilege of taking additional work
77.1	( ) 3.	Dean's list, honor roll, or other published list
51.1	( ) 4.	National Honor Society or equivalent club
63.4	( ) 5.	Special prizes or awards
10.3	( ) 6.	Other special recognition (specify)________

15. Does your school provide an accelerated curriculum for superior grades 9-12 students? Mark all that apply.

7.2	( ) 1.	Yes, student classified as "superior" may enter an advanced curriculum in any course.
6.4	( ) 2.	Yes, advanced curricula are available in all courses for students classified as "superior" in that course area.
19.8	( ) 3.	Yes, in one or more science courses for students classified "superior" in science
29.9	( ) 4.	Yes, in one or more math courses for students classified "superior" in math
10.4	( ) 5.	Yes, in one or more language courses for students classified "superior" in language
10.6	( ) 6.	Yes, in one or more courses other than math, science, or languages for students classified "superior" in that course area
61.3	( ) 7.	No

*Responses total more than 100% because of coding.

16. What opportunity is there for students in your school to obtain advanced placement and/or credit in college?

1.8	( ) 1.	We offer one or more courses that use the syllabuses of the Advanced Placement Program of the College Entrance Examination Board.
7.6	( ) 2.	We offer our own advanced courses to superior students and they take the Advanced Placement Tests of the College Entrance Examination Board.
21.0	( ) 3.	We offer no special advanced courses, but superior students from our school have qualified for advanced placement in college by taking the Advanced Placement Tests of College Entrance Examination Board.
8.8	( ) 4.	Particular colleges that are familiar with our program give advanced placement and/or credit to superior students in certain of their courses for which they feel our program provides satisfactory equivalent instruction.
61.9	( ) 5.	No special opportunity for advanced placement in college is available.

(More than one option marked)

17. What do the grades in subjects generally represent?

52.0	( ) 1.	Primarily level of subject matter achievement
20.4	( ) 2.	Primarily level of achievement relative to the achievement of classmates
19.4	( ) 3.	Primarily achievement in relation to ability
4.2	( ) 4.	Separate grades for achievement and achievement in relation to ability are given for each course.
1.9	( ) 5.	Separate grades are given for achievement and achievement relative to the achievement of classmates for each course.
2.1	( ) 6.	Other (specify)________

18. What kind of final course grades are given in your school (grades 9-12)? Mark all that apply.

73.1	( ) 1.	Letter grades
34.8	( ) 2.	Numerical grades
3.3	( ) 3.	Pass-Fail; or Pass-Doubtful-Fail; or Excellent-Satisfactory-Unsatisfactory; or similar two or three-category system
6.0	( ) 4.	Written descriptive paragraphs
12.1	( ) 5.	Conference with parent
1.4	( ) 6.	Other (specify)________

19. What is the principal basis used to assign pupils to most instructional classes in your school (grades 9-12)?

1.6	( ) 1.	Intelligence or aptitude test scores
2.1	( ) 2.	Achievement test scores
11.1	( ) 3.	School marks
5.0	( ) 4.	Judgments of teachers or principal
66.9	( ) 5.	Some combination of the above factors
1.7	( ) 6.	Other (specify)________
11.6	( ) 7.	No effort is made to assign pupils to particular instructional classes.

20. Which of the following statements best describes your school system's summer program (grades 9-12)?

1.3 ( ) 1. Students can take one repeat course only.
5.0 ( ) 2. Students can take as many as two courses, but only repeat work.
2.1 ( ) 3. Certain students can take one course of new work.
6.0 ( ) 4. Certain students can take as many as two courses of new work.
7[illegible].6 ( ) 5. There is no summer program in this school system.
4.8 ( ) 6. Other (specify) ______________________________
7.2 Both repeat and new work.

21. Which of the following kinds of grades 9-12 courses are offered by your school system in an organized summer school program?

73.3 ( ) 1. No courses are offered.
1.9 ( ) 2. Non-credit courses only
13.9 ( ) 3. Courses creditable toward high school graduation only
10.9 ( ) 4. Both credit and non-credit courses

22. Which of the following kinds of grades 9-12 courses are offered by your school system as part of an organized adult education program (day and/or evening)? Mark all that apply.

59.2 ( ) 1. No courses are offered.
4.5 ( ) 2. Elementary level courses
8.4 ( ) 3. High school credit courses, non-vocational
7.2 ( ) 4. Credit, vocational courses
34.6 ( ) 5. Non-credit, vocational courses
15.7 ( ) 6. Non-credit courses, non-vocational

23. Does the school system provide for religious education?

19.1 ( ) 1. Yes, within the regular curriculum
7.8 ( ) 2. Yes, by released time, for all pupils
6.3 ( ) 3. Yes, by released time, but pupils are excused from exercises which are alien to their religious tenets.
66.8 ( ) 4. No

24. If a foreign language is studied by a pupil, how many years work is ordinarily required for him to obtain graduation credit for that language?

11.7 None
3.9 ( ) 1. 1/2
37.0 ( ) 2. 1
.1 ( ) 3. 1 1/2
44.8 ( ) 4. 2
- ( ) 5. 2 1/2
1.7 ( ) 6. 3
.8 ( ) 7. 3 1/2 or more

25. In which of the following areas has your grades 9-12 school taken part in a large scale inter-system tryout of a special, experimental curriculum?

3.7 ( ) 1. Math only
2.6 ( ) 2. Science only
.9 ( ) 3. Non-science only
6.5 ( ) 4. Math and science only
1.0 ( ) 5. Math and non-science only
.5 ( ) 6. Science and non-science, not math
6.2 ( ) 7. Math, science, and non-science
78.6 ( ) 8. None

26. In which of the following areas has your grades 9-12 school or school system developed and tried out its own special, experimental curriculum?

7.8 ( ) 1. Math only
3.3 ( ) 2. Science only
3.1 ( ) 3. Non-science only
8.2 ( ) 4. Math and science only
2.1 ( ) 5. Math and non-science only
1.0 ( ) 6. Science and non-science, not math
12.4 ( ) 7. Math, science, and non-science
62.2 ( ) 8. None

27. Which of the following statements best describes the current use (grades 9-12) of teaching machines in your school? (Teaching machines may be thought of as individual self-instructional devices which automatically provide both learning material and answers to student responses. They do not include the usual educational films, slides, educational TV, etc.)

67.1 ( ) 1. They are not now used; no use is foreseen within the next year or so.
14.3 ( ) 2. They are not now used, but plans are being made to experiment with their use during the next year or so.
5.6 ( ) 3. They are now being used sparingly on an experimental basis.
9.5 ( ) 4. They are now being used regularly in a few cases.
2.4 ( ) 5. They are now being used regularly in many instances.
1.1 ( ) 6. Other (specify) ______________________________

28. Which of the following best describes the changes which have occurred in your total grades 9-12, current active enrollment as compared to this time last year?

39.6 ( ) 1. Up, about 1-10%
8.3 ( ) 2. Up, by about 11-20%
3.3 ( ) 3. Up, by 21% or more
31.2 ( ) 4. About the same this year as last year
15.7 ( ) 5. Down, by about 1-10%
.7 ( ) 6. Down, by about 11-20%
1.0 ( ) 7. Down, by 21% or more

29. Estimate the average daily percentage of absenteeism in grades 9-12 in your school over the current school year.

19.3 ( ) 1. 2% or less
46.0 ( ) 2. 3-5%
25.8 ( ) 3. 6-8%
6.8 ( ) 4. 9-11%
1.4 ( ) 5. 12-14%
.3 ( ) 6. 15-17%
.2 ( ) 7. 18-20%
- ( ) 8. 21-23%
- ( ) 9. 24-27%
.1 ( ) 10. 28% or more

30. Which of the following best describes the tenure situation in your school system?

54.5 ( ) 1. There is no formal tenure system at this time.
3.8 ( ) 2. Tenure is awarded to some teachers, at the discretion of school officials.
5.4 ( ) 3. It is the policy to place teachers on tenure, after a period of time which depends on the case in question.
36.2 ( ) 4. Teachers are automatically placed on tenure after a certain fixed period of time prescribed by school system regulations.

31. In which of the following areas do you feel that your school (grades 9-12) now needs some additional staff members? Mark all that apply.

17.7 ( ) 1. Administrative
25.2 ( ) 2. Supervisory
71.2 ( ) 3. Counseling and guidance
55.3 ( ) 4. Classroom teachers
45.8 ( ) 5. Clerical
22.9 ( ) 6. Janitorial - maintenance

32. About how many books does your school have in its library?

2.5 ( ) 1. Less than 300
6.8 ( ) 2. 300-599
5.3 ( ) 3. 600-899
8.9 ( ) 4. 900-1199
7.4 ( ) 5. 1200-1499
8.3 ( ) 6. 1500-1799
7.0 ( ) 7. 1800-2099
6.6 ( ) 8. 2100-2399
4.5 ( ) 9. 2400-2699
42.8 ( ) 10. 2700 or more

33. About how old is the main building of your school plant?

14.9 ( ) 1. Less than 5 years old
12.3 ( ) 2. 5-9 years
6.1 ( ) 3. 10-14 years
4.1 ( ) 4. 15-19 years
9.8 ( ) 5. 20-24 years
8.4 ( ) 6. 25-29 years
12.8 ( ) 7. 30-34 years
9.4 ( ) 8. 35-39 years
7.0 ( ) 9. 40-44 years
14.9 ( ) 10. 45 years or more

34. About how long since your school plant received its last major renovation? (Include painting if no reconstruction work was done.)

52.9 ( ) 1. Less than 3 years ago
19.7 ( ) 2. 3-5 years ago
6.1 ( ) 3. 6-8 years ago
3.5 ( ) 4. 9-11 years ago
1.1 ( ) 5. 12-14 years ago
.6 ( ) 6. 15-17 years ago
.2 ( ) 7. 18-20 years ago
.2 ( ) 8. 21-23 years ago
1.0 ( ) 9. 24 or more years ago
14.7 ( ) 10. Has never had a major renovation

35. In which of the following areas does your school have full-time curriculum supervisors? Mark all that apply.

27.8 ( ) 1. Music
19.3 ( ) 2. Math
12.4 ( ) 3. Art
17.7 ( ) 4. Science
19.5 ( ) 5. English
12.3 ( ) 6. Foreign language
17.8 ( ) 7. History and/or social studies
* ( ) 8. Other (specify) ______________________________

*Not given because of complexity of coding.

36. Which one of the following categories best describes your school?

84.0 ( ) 1. Public
7.2 ( ) 2. Parochial or diocesian
5.7 ( ) 3. Private, religious affiliated
2.1 ( ) 4. Private, not religious affiliated
.9 ( ) 5. Other (specify) ______________________________

37. Does your school system have midyear graduations?

1.5 ( ) 1. Yes, in all or almost all cases
.1 ( ) 2. In elementary schools, but not in high schools
1.3 ( ) 3. In high schools, but not in elementary schools
96.4 ( ) 4. No
.6 ( ) 5. Other (specify) ______________________________

38. Which of the following extra-curricular activities are offered by your school? Mark as many as apply.

70.6 ( ) 1. Student Government
76.2 ( ) 2. School newspaper
67.6 ( ) 3. School magazine and/or annual
92.4 ( ) 4. Inter-school athletics for boys
48.1 ( ) 5. Inter-school athletics for girls
67.1 ( ) 6. Intramural athletics for boys
62.1 ( ) 7. Intramural athletics for girls
69.7 ( ) 8. Orchestra and/or band
77.8 ( ) 9. Glee club
1.2 ( ) 10. Fraternities, sororities, or other exclusive social clubs
48.6 ( ) 11. National Honorary Society
58.0 ( ) 12. Subject matter clubs (as math club, music club, Latin club, etc.)
10.9 ( ) 13. Chess club
19.4 ( ) 14. Hobby clubs (as stamp club, model airplane club, Hi-Fi club, etc.)
78.8 ( ) 15. Drama, plays
25.3 ( ) 16. Debate
66.8 ( ) 17. Dances
2.5 ( ) 18. Military cadets
30.8 ( ) 19. Service clubs (as Key club, wheel club, Hi-Y, etc.)
16.9 ( ) 20. Religious clubs (as Newman club, etc.)
11.7 ( ) 21. Other (specify)

A-4

39. Does your school have homogeneous grouping of students into classes, to take care of different ability levels (grades 9-12)?

5.2 ( ) 1. Yes, for all courses
20.7 ( ) 2. Yes, for many courses
30.6 ( ) 3. Yes, for a few courses
43.5 ( ) 4. No

40. How many tracks does your school have in grades 9-12?

17.2 ( ) 1. One track
33.5 ( ) 2. One track with electives
15.2 ( ) 3. Two tracks
20.8 ( ) 4. Three tracks
13.3 ( ) 5. Four or more tracks

41. What is the policy on acceleration in your school?

12.2 ( ) 1. Bright children are permitted to graduate from high school in less than the normal time by taking summer courses.
16.4 ( ) 2. Bright children are permitted to graduate from high school in less than the normal time by taking more than the minimal number of courses during the school year.
.8 ( ) 3. Bright children are permitted to graduate from high school in less than the normal time by taking examinations for credit in courses they have not taken.
72.0 ( ) 4. No acceleration is permitted.
3.5 ( ) 5. Other (specify) ____________________
1.1 6. Permitted means not specified

42. What is the policy in your school regarding promotion of slow learners?

31.9 ( ) 1. The pupil must repeat courses in which he has done failing work.
55.9 ( ) 2. The pupil must repeat courses in which he has done failing work if he wishes to receive credit for them.
2.2 ( ) 3. The policy is 100% promotion.
9.9 ( ) 4. Other (specify) ____________________
____

SECTION I - YOUR SCHOOL (Cont.)

About Your Teaching Staff

43. About how many full-time teachers are on your grades 9-12 teaching staff this school year, not counting counselors and administrative personnel? (Include the number of full-time equivalents of part-time teachers.)

1.0 ( ) 1. 2 or fewer
14.0 ( ) 2. 3-5
19.8 ( ) 3. 6-8
16.4 ( ) 4. 9-11
9.7 ( ) 5. 12-14
6.6 ( ) 6. 15-17
6.2 ( ) 7. 18-20
4.3 ( ) 8. 21-23
2.8 ( ) 9. 24-26
19.4 ( ) 10. 27 or more

44. About how many full-time teachers were on your grades 9-12 teaching staff last school year, not counting counselors and administrative personnel? (Include the number of full-time equivalents of part-time teachers.)

1.5 ( ) 1. 2 or fewer
16.1 ( ) 2. 3-5
19.8 ( ) 3. 6-8
16.0 ( ) 4. 9-11
8.7 ( ) 5. 12-14
7.1 ( ) 6. 15-17
5.5 ( ) 7. 18-20
3.7 ( ) 8. 21-23
3.0 ( ) 9. 24-26
18.5 ( ) 10. 27 or more

45. About how many part-time teachers are on your grades 9-12 teaching staff on a regular basis? (Do not include substitutes or those appointed for less than one school year.)

74.1 ( ) 1. 2 or fewer
14.9 ( ) 2. 3-5
4.4 ( ) 3. 6-8
2.0 ( ) 4. 9-11
1.1 ( ) 5. 12-14
.9 ( ) 6. 15-17
.1 ( ) 7. 18-20
.4 ( ) 8. 21-23
- ( ) 9. 24-26
2.0 ( ) 10. 27 or more

46. About what percentage of your full-time grades 9-12 teachers are men?

4.0 ( ) 1. None
3.8 ( ) 2. 0-9%
2.0 ( ) 3. 10-19%
5.2 ( ) 4. 20-29%
8.1 ( ) 5. 30-39%
15.9 ( ) 6. 40-49%
20.5 ( ) 7. 50-59%
18.5 ( ) 8. 60-69%
10.6 ( ) 9. 70-79%
5.0 ( ) 10. 80-89%
1.0 ( ) 11. 90-99%
5.5 ( ) 12. All

47. About how many full-time, grades 9-12, teachers left your school during the last school year and had to be replaced?

67.9 ( ) 1. 0-2
24.3 ( ) 2. 3-5
4.9 ( ) 3. 6-8
1.4 ( ) 4. 9-11
.6 ( ) 5. 12-14
.3 ( ) 6. 15-17
.2 ( ) 7. 18-20
- ( ) 8. 21-23
.2 ( ) 9. 24-26
.2 ( ) 10. 27 or more

48. About how many of your full-time grades 9-12 teachers have a Bachelor's degree, but not a Master's or a Doctor's degree?

8.1 ( ) 1. 0-2
21.9 ( ) 2. 3-5
24.9 ( ) 3. 6-8
12.5 ( ) 4. 9-11
8.0 ( ) 5. 12-14
5.9 ( ) 6. 15-17
4.5 ( ) 7. 18-20
2.5 ( ) 8. 21-23
2.6 ( ) 9. 24-26
9.2 ( ) 10. 27 or more

49. About how many of your full-time grades 9-12 teachers have a Master's degree but not a Doctor's degree?

13.7 ( ) 1. None
29.2 ( ) 2. 1 or 2
23.1 ( ) 3. 3-5
11.0 ( ) 4. 6-8
6.7 ( ) 5. 9-11
3.3 ( ) 6. 12-14
2.4 ( ) 7. 15-17
2.4 ( ) 8. 18-20
1.6 ( ) 9. 21-23
6.5 ( ) 10. 24 or more

50. About how many of your full-time grades 9-12 classroom teachers have a Doctor's degree?

94.4 ( ) 1. None
4.0 ( ) 2. 1
1.1 ( ) 3. 2
- ( ) 4. 3
.2 ( ) 5. 4
- ( ) 6. 5
- ( ) 7. 6
- ( ) 8. 7
.1 ( ) 9. 8
.1 ( ) 10. 9 or more

51. About what percentage of your full-time, grades 9-12, teaching staff is fully certified by your state? (Do not include those holding temporary or provisional certification.)

2.5 ( ) 1. None
2.0 ( ) 2. 0-9%
.9 ( ) 3. 10-19%
.5 ( ) 4. 20-29%
.6 ( ) 5. 30-39%
.4 ( ) 6. 40-49%
1.3 ( ) 7. 50-59%
2.5 ( ) 8. 60-69%
2.3 ( ) 9. 70-79%
5.7 ( ) 10. 80-89%
18.2 ( ) 11. 90-99%
63.2 ( ) 12. All

52. About what percentage of your full-time, grades 9-12, teaching staff currently spend more than half of their teaching time teaching in their major area of preparation?

1.4 ( ) 1. None
.6 ( ) 2. 0-9%
.2 ( ) 3. 10-19%
.4 ( ) 4. 20-29%
.9 ( ) 5. 30-39%
1.0 ( ) 6. 40-49%
3.9 ( ) 7. 50-59%
2.4 ( ) 8. 60-69%
6.6 ( ) 9. 70-79%
12.3 ( ) 10. 80-89%
22.8 ( ) 11. 90-99%
47.7 ( ) 12. All

53. About how many of your full-time, grades 9-12, teachers have some graduate training in one or more of the subject matter areas they teach?

3.5 ( ) 1. None
14.6 ( ) 2. 1 or 2
27.8 ( ) 3. 3-5
16.0 ( ) 4. 6-8
9.8 ( ) 5. 9-11
6.3 ( ) 6. 12-14
3.2 ( ) 7. 15-17
2.9 ( ) 8. 18-20
2.8 ( ) 9. 21-23
13.1 ( ) 10. 24 or more

54. How many of your full-time grades 9-12 teachers attended summer school last summer?

70.5 ( ) 1. 5 or fewer
14.3 ( ) 2. 6-8
6.8 ( ) 3. 9-11
3.4 ( ) 4. 12-14
2.1 ( ) 5. 15-17
1.1 ( ) 6. 18-20
.4 ( ) 7. 21-23
.6 ( ) 8. 24-26
.2 ( ) 9. 27-29
.6 ( ) 10. 30 or more

55. In which of the following areas have one or more of your grades 9-12 teaching staff attended one or more of the Summer Institutes for teachers sponsored by the National Science Foundation or the National Defense Education Act of 1958?

6.2 ( ) 1. Math only
18.2 ( ) 2. Science only
1.8 ( ) 3. Counseling and guidance only
2.9 ( ) 4. Science and counseling and guidance only
.8 ( ) 5. Math and counseling and guidance only
20.0 ( ) 6. Math and science only
6.4 ( ) 7. All three areas
43.7 ( ) 8. None of the three areas

56. What is the annual starting salary in your school for male secondary teachers with a Bachelor's degree and no experience?

1.2 ( ) 1. Less than $1000
.7 ( ) 2. $1000-1499
.1 ( ) 3. $1500-1999
2.3 ( ) 4. $2000-2499
12.5 ( ) 5. $2500-2999
19.3 ( ) 6. $3000-3499
20.9 ( ) 7. $3500-3999
36.0 ( ) 8. $4000-4499
6.2 ( ) 9. $4500-4999
.9 ( ) 10. $5000 or more

57. What is the annual starting salary in your school for female secondary teachers with a Bachelor's degree and no experience?

1.6 ( ) 1. Less than $1000
.4 ( ) 2. $1000-1499
.3 ( ) 3. $1500-1999
2.8 ( ) 4. $2000-2499
13.0 ( ) 5. $2500-2999
20.3 ( ) 6. $3000-3499
23.0 ( ) 7. $3500-3999
32.8 ( ) 8. $4000-4499
4.8 ( ) 9. $4500-4999
.9 ( ) 10. $5000 or more

58. What is the average number of years of full-time teaching experience among your current full-time teaching staff (grades 9-12)?

1.4 ( ) 1. Under 3 years
7.8 ( ) 2. 3-5 years
20.3 ( ) 3. 6-8 years
27.7 ( ) 4. 9-11 years
20.7 ( ) 5. 12-14 years
22.1 ( ) 6. 15 years or more

SECTION I - YOUR SCHOOL (Cont.)

About Your Students

59. Pupils: Please write in the number of students on the current active roll in your school for the 9th, 10th, 11th, and 12th grades by boys and girls, in the spaces below: (Place a cross (X) in Column II in each case where boys and girls are taught in separate classes:)

I Grade	II Separate Class (X)	III No. of Boys	IV No. of Girls	V Total
9th	( )	______	______	______
10th	( )	______	______	______
11th	( )	______	______	______
12th	( )	______	______	______
Ungraded	( )	______	______	______
Postgraduate	( )	______	______	______
	TOTALS:	______	______	______

60. About what percentage of the grades 9-12 pupils attending your school this school year attended a different school last year? (Do not include pupils who started in the lowest grade in your school this year.)

60.8	( ) 1. 0-4%	.9	( ) 7. 30-34%
22.1	( ) 2. 5-9%	.8	( ) 8. 35-39%
8.2	( ) 3. 10-14%	.4	( ) 9. 40-44%
2.0	( ) 4. 15-19%	.2	( ) 10. 45-49%
2.0	( ) 5. 20-24%	.3	( ) 11. 50-54%
2.2	( ) 6. 25-29%	.1	( ) 12. 55% or more

61. About what percentage of the grades 9-12 pupils who attended your school last school year are now attending a different school? (Do not include graduates.)

68.4	( ) 1. 0-4%	.5	( ) 7. 30-34%
22.6	( ) 2. 5-9%	.1	( ) 8. 35-39%
4.4	( ) 3. 10-14%	-	( ) 9. 40-44%
1.5	( ) 4. 15-19%	-	( ) 10. 45-49%
1.2	( ) 5. 20-24%	.4	( ) 11. 50-54%
.9	( ) 6. 25-29%	-	( ) 12. 55% or more

Questions 62 through 68 refer to the table of percentages below. For each item mark an "X" in the parentheses to show the correct percentage.

About what percentage of your grades 9-12 pupils are in each of the following school programs?

Percentage Category:	None	0-9	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	All
62. College Prep.	( ) 11.9	( ) 2.3	( ) 7.4	( ) 12.3	( ) 17.2	( ) 11.0	( ) 9.7	( ) 6.3	( ) 5.8	( ) 4.4	( ) 2.3	( ) 9.5
63. Commercial and/or Distributive Educ.	( ) 25.3	( ) 9.4	( ) 18.9	( ) 24.7	( ) 12.8	( ) 4.8	( ) 2.3	( ) .9	( ) .5	( ) .2	( ) .3	( ) -
64. Industrial, Trade and/or Vocational	( ) 45.8	( ) 17.9	( ) 16.2	( ) 10.1	( ) 5.5	( ) 2.6	( ) .3	( ) .2	( ) .1	( ) .2	( ) .2	( ) 1.1
65. Diversified Co-operative Educ.	( ) 86.6	( ) 7.9	( ) 2.6	( ) 1.5	( ) .7	( ) .4	( ) .2	( ) .2	( ) -	( ) -	( ) -	( ) -
66. Agricultural	( ) 54.1	( ) 16.8	( ) 13.4	( ) 8.5	( ) 4.6	( ) 2.5	( ) .1	( ) -	( ) -	( ) -	( ) -	( ) -
67. General Diploma (not one of the above)	( ) 14.8	( ) 8.8	( ) 13.3	( ) 14.3	( ) 9.7	( ) 6.2	( ) 7.6	( ) 1.8	( ) 2.8	( ) 2.0	( ) .3	( ) 18.3
68. Other (not one of the above) Specify ______ ______ ______	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )

Percentages omitted because of excessive omits.

69. During the last school year, about what percentage of your students in grades 9-12 were required to appear before juvenile courts for one or more offenses?

68.7*	( ) 1. None	3.3	( ) 6. 5%
64.7	( ) 2. 1%	1.8	( ) 7. 6%
20.0	( ) 3. 2%	.6	( ) 8. 7%
5.0	( ) 4. 3%	-	( ) 9. 8%
4.1	( ) 5.. 4%	.6	( ) 10. 9% or more.

70. About what percentage of all boys who enter your 10th grade drop out before graduation? (Do not include boys who transfer in your calculations.)

66.9	( ) 1. 0-9%
22.0	( ) 2. 10-19%
7.2	( ) 3. 20-29%
2.9	( ) 4. 30-39%
.8	( ) 5. 40-49%
.2	( ) 6. 50% or more.

*Ratio of non-respondents to total respondents on this item.

71. About what percentage of all girls who enter your 10th grade drop out before graduation? (Do not include girls who transfer in your calculations.)

71.8	( ) 1. 0-9%
21.5	( ) 2. 10-19%
4.8	( ) 3. 20-29%
1.2	( ) 4. 30-39%
.5	( ) 5. 40-49%
.1	( ) 6. 50% or more

72. About what percentage of the boys in your graduating senior class last year went on to college?

5.6	( ) 1. None	9.1	( ) 7. 50-59%
16.4	( ) 2. 0-9%	4.3	( ) 8. 60-69%
15.9	( ) 3. 10-19%	3.2	( ) 9. 70-79%
18.2	( ) 4. 20-29%	1.7	( ) 10. 80-89%
11.6	( ) 5. 30-39%	2.8	( ) 11. 90-99%
9.6	( ) 6. 40-49%	1.6	( ) 12. All

73. About what percentage of the girls in your graduating senior class last year went on to college?

8.1	( ) 1. None	7.5	( ) 7. 50-59%
15.8	( ) 2. 0-9%	4.3	( ) 8. 60-69%
17.6	( ) 3. 10-19%	3.0	( ) 9. 70-79%
17.9	( ) 4. 20-29%	.9	( ) 10. 80-89%
14.8	( ) 5. 30-39%	1.4	( ) 11. 90-99%
7.1	( ) 6. 40-49%	1.4	( ) 12. All

74. Approximately what percentage of your grades 9-12 students go on to get some post high school education or training of some kind other than the usual junior college or 4-year college program? (Do not include military service or post graduate high school work.)

31.1	( ) 1. Less than 5%	4.1	( ) 6. 25-29%
20.3	( ) 2. 5-9%	3.2	( ) 7. 30-34%
20.4	( ) 3. 10-14%	2.1	( ) 8. 35-39%
8.2	( ) 4. 15-19%	1.3	( ) 9. 40-44%
6.5	( ) 5. 20-24%	2.7	( ) 10. 45% or more

75. Estimate the percentage of your grades 9-12 students who go on specifically to junior college (whether or not they intend to continue their college work elsewhere, later).

66.0	( ) 1. Less than 5%	2.8	( ) 6. 25-29%
12.6	( ) 2. 5-9%	1.2	( ) 7. 30-34%
6.2	( ) 3. 10-14%	1.3	( ) 8. 35-39%
3.4	( ) 4. 15-19%	.7	( ) 9. 40-44%
3.6	( ) 5. 20-24%	2.1	( ) 10. 45% or more

76. What percentage of your grades 9-12 students are taking some course or special classwork in remedial arithmetic or remedial mathematics?

81.8	( ) 1. 0-4%
8.6	( ) 2. 5-9%
5.2	( ) 3. 10-14%
2.0	( ) 4. 15-19%
1.3	( ) 5. 20-24%
1.0	( ) 6. 25% or more

77. What percentage of your grades 9-12 students are taking some course or special classwork in remedial reading and/or remedial English?

77.1	( ) 1. 0-4%
11.4	( ) 2. 5-9%
5.4	( ) 3. 10-14%
2.1	( ) 4. 15-19%
1.3	( ) 5. 20-24%
2.7	( ) 6. 25% or more

78. What percentage of your grades 9-12 students take repeat or remedial summer school work?

76.3	( ) 1. 0-4%
16.5	( ) 2. 5-9%
5.6	( ) 3. 10-14%
1.0	( ) 4. 15-19%
.3	( ) 5. 20-24%
.3	( ) 6. 25% or more

79. About what percentage of the grades 9-12 boys in your school are members of fraternities?

98.1	( ) 1. 0-4%	.1	( ) 7. 30-34%
.6	( ) 2. 5-9%	-	( ) 8. 35-39%
.4	( ) 3. 10-14%	-	( ) 9. 40-44%
.1	( ) 4. 15-19%	-	( ) 10. 45-49%
.3	( ) 5. 20-24%	.1	( ) 11. 50-54%
.2	( ) 6. 25-29%	.2	( ) 12. 55% or more

80. About what percentage of the grades 9-12 girls in your school are members of sororities?

97.6	( ) 1. 0-4%	.1	( ) 7. 30-34%
.9	( ) 2. 5-9%	.2	( ) 8. 35-39%
.3	( ) 3. 10-14%	.1	( ) 9. 40-44%
.1	( ) 4. 15-19%	-	( ) 10. 45-49%
.3	( ) 5. 20-24%	.1	( ) 11. 50-54%
.1	( ) 6. 25-29%	.2	( ) 12. 55% or more

81. About what percentage of your grades 9-12 students take new work in summer school?

44.0	( ) 1.	None, because of school policy
45.4	( ) 2.	0-4%
6.0	( ) 3.	5-9%
1.6	( ) 4.	10-14%
1.2	( ) 5.	15-19%
1.8	( ) 6.	20% or more

82. What percentage of your grades 9-12 students are on half-day sessions (i.e., double shifts)?

96.6	( ) 1.	None
2.8	( ) 2.	0-9%
-	( ) 3.	10-19%
-	( ) 4.	20-29%
-	( ) 5.	30-39%
.1	( ) 6.	40-49%
-	( ) 7.	50-59%
-	( ) 8.	60-69%
-	( ) 9.	70-79%
-	( )10.	80-89%
.1	( )11.	90-99%
.4	( )12.	All of them

SECTION II - THE COMMUNITY

83. Has a citizens group made a study in grades 9-12 of your school in the last three years?

3.5	( ) 1.	Yes, an age-grade study
13.6	( ) 2.	Yes, a study other than age-grade
.6	( ) 3.	No, but an age-grade study is planned for this year or next
4.3	( ) 4.	No, but a study other than age-grade is planned for this year or next
78.2	( ) 5.	No, and no study is currently planned

Note. Adds up to more than 100% because more than one option used.

84. For approximately what percentage of your students in grades 9-12 are one or both parents members of the PTA?

16.4		**No PTA**
17.4	( ) 1.	Less than 7%
9.4	( ) 2.	7-13%
9.1	( ) 3.	14-20%
7.1	( ) 4.	21-27%
8.5	( ) 5.	28-34%
6.8	( ) 6.	35-41%
2.9	( ) 7.	42-48%
8.2	( ) 8.	49-55%
4.0	( ) 9.	56-62%
10.2	( ) 10.	63% or more

85. On the average, how often does your PTA meet?

.2	( ) 1.	About once a week or oftener
1.9	( ) 2.	About once every two weeks
.2	( ) 3.	About once every three weeks
56.3	( ) 4.	About once every four weeks
2.7	( ) 5.	About once every five weeks
3.6	( ) 6.	About once every six weeks
1.1	( ) 7.	About once every seven weeks
3.0	( ) 8.	About once every eight weeks
3.9	( ) 9.	About once every nine or more weeks
1.4	( ) 10.	Only irregularly
25.6	( ) 11.	There is currently no organized PTA in this school.

86. Roughly, how old is the average house or apartment house in the area from which most of your school's pupils in grades 9-12 are drawn?

.2	( ) 1.	Less than 5 years old
3.9	( ) 2.	5-9 years old
15.1	( ) 3.	10-14 years old
17.1	( ) 4.	15-19 years old
18.4	( ) 5.	20-24 years old
13.4	( ) 6.	25-29 years old
11.2	( ) 7.	30-34 years old
6.5	( ) 8.	35-39 years old
3.0	( ) 9.	40-44 years old
4.2	( ) 10.	45 or more years old
7.0	( ) 11.	Students are resident students - cannot estimate.

87. The residences in the area served by your school are best described as primarily

1.5	( ) 1.	expensive private homes.
53.6	( ) 2.	moderate-priced homes.
23.2	( ) 3.	low cost homes.
.5	( ) 4.	high-rental apartments.
.5	( ) 5.	moderate-rental apartments.
.5	( ) 6.	low rental apartments.
10.8	( ) 7.	low income areas.
3.1	( ) 8.	about equally apartments and homes
6.3	( ) 9.	Students are resident students - cannot estimate.

88. Pupils attending grades 9-12 in your school come from areas which are best described as primarily

8.2	( ) 1.	urban residential.
1.3	( ) 2.	urban industrial.
.3	( ) 3.	urban commercial.
8.9	( ) 4.	suburban residential.
2.0	( ) 5.	suburban industrial.
.3	( ) 6.	suburban commercial.
12.8	( ) 7.	scattered over the entire city (larger than 5000 people).
24.2	( ) 8.	small town (under 5000 people).
34.9	( ) 9.	rural - farm.
3.0	( ) 10.	Other (specify)______________
4.2	( ) 11.	Students are resident students - cannot estimate.

89. In dollars per year, what was the average per-pupil expenditure for all purposes in your school system last year (grades 9-12)? (Write in in the blank provided.)

$ _______ per year

90. In dollars per year, what was the average per-pupil expenditure for all purposes in your school last year (grades 9-12)? (Write in in the blank provided.)

$ _______ per year

91. What is the current school tax rate in the community where your school is located? (Write in in dollars per $1000 of evaluation in the blank provided.)

$ _______ per year per $1000 of evaluation

92. What is the current ratio of assessment to property value? (Write in as a percentage in the blank provided.)

35.5 _______ %

93. Approximately what percentage of your grades 9-12 pupils come from homes where one or more languages other than English are regularly spoken?

39.9	( ) 1.	None
43.5	( ) 2.	0-9%
7.7	( ) 3.	10-19%
3.5	( ) 4.	20-29%
.9	( ) 5.	30-39%
1.0	( ) 6.	40-49%
1.5	( ) 7.	50-59%
.3	( ) 8.	60-69%
.6	( ) 9.	70-79%
.5	( ) 10.	80-89%
.3	( ) 11.	90-99%
.3	( ) 12.	All

94. Approximately what percentage of school support is obtained from local (city, county, school district) sources?

16.3	( ) 1.	None
3.5	( ) 2.	0-9%
8.7	( ) 3.	10-19%
11.0	( ) 4.	20-29%
7.9	( ) 5.	30-39%
7.0	( ) 6.	40-49%
9.1	( ) 7.	50-59%
6.8	( ) 8.	60-69%
9.8	( ) 9.	70-79%
8.2	( ) 10.	80-89%
6.4	( ) 11.	90-99%
3.2	( ) 12.	All

Items 95 through 99 refer to the following table. Mark the correct percentage for each item by placing an "X" in the parentheses in the appropriate place in the table.

About what percentage of your grades 9-12 pupils are:

Percentage Category:	None	0-9	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	All
95. Spanish or Latin American	56.3	27.7	2.8	.8	.5	.4	.5	.1	.3	-	.3	.2
96. Oriental	87.2	12.2	.1	.2	-	-	.2	.1	-	-	-	-
97. American Indian	84.4	13.9	1.7	.4	.1	.1	-	-	-	-	.1	.2
98. Negro	68.2	20.4	2.4	.5	.2	.1	-	.1	.1	.1	.3	7.4
99. Other "Minority" Group (specify) ____________ ____________	**Figures not given because of excessive number of omitts.**											

100. Which of the following community facilities are readily available to the students in your school? Mark an "X" for all that apply.

71.3	( ) 1.	Public Library
21.5	( ) 2.	Museum
9.6	( ) 3.	Opera
30.2	( ) 4.	Concerts
26.9	( ) 5.	Community Theater, Amateur Theater
10.2	( ) 6.	Legitimate Professional Stage
71.8	( ) 7.	4-H Club Chapter
79.5	( ) 8.	Boy Scout Troop or similar group
63.3	( ) 9.	Girl Scout Troop or similar group
43.7	( ) 10.	Public Recreation Center
50.2	( ) 11.	Public Swimming Facilities
19.4	( ) 12.	Future Nurses Club
16.2	( ) 13.	Art Gallery
34.4	( ) 14.	Teen-age Centers
48.3	( ) 15.	Future Farmers of America
44.0	( ) 16.	Future Teachers of America
*	( ) 17.	Other (specify) ______________ ______________ ______________

***Not given because of complexity of coding.**

SECTION III - YOU

101. How many years have you been a principal (or assistant principal) in any school?

25.7	( ) 1.	Fewer than 5
24.2	( ) 2.	5-9
19.8	( ) 3.	10-14
9.9	( ) 4.	15-19
8.7	( ) 5.	20-24
11.6	( ) 6.	25 or more

102. How long have you been principal in this school?

17.4	( ) 1.	This is my first year.	7.9	( ) 6.	9-11 years
12.6	( ) 2.	This is my second year.	7.7	( ) 7.	12-14 years
8.7	( ) 3.	This is my third year.	5.3	( ) 8.	15-17 years
18.1	( ) 4.	3-5 years	3.4	( ) 9.	18-20 years
14.4	( ) 5.	6-8 years	4.4	( ) 10.	21 years or more

103. How old are you?

.2	( ) 1.	24 or younger	18.8	( ) 7.	50-54
3.8	( ) 2.	25-29	11.2	( ) 8.	55-59
12.9	( ) 3.	30-34	4.1	( ) 9.	60-64
15.5	( ) 4.	35-39	2.8	( ) 10.	65-69
14.3	( ) 5.	40-44	.2	( ) 11.	70 or older
16.1	( ) 6.	45-49			

104. What is your sex?

88.8	( ) 1.	Male
11.2	( ) 2.	Female

105. How many years of teaching experience did you have prior to taking your present position? (Include all years of full-time teaching and all full time years of part teaching - part administration or supervision. Do not include years as full-time administrator or supervisor in previous schools.)

19.6	( ) 1.	Fewer than 5
27.3	( ) 2.	5-9
19.1	( ) 3.	10-14
13.5	( ) 4.	15-19
10.0	( ) 5.	20-24
10.5	( ) 6.	25 or more

106. What is the highest earned college degree you hold?

.2	( ) 1.	No college degree
-	( ) 2.	Junior College or less-than-four-year teachers college degree
16.7	( ) 3.	Bachelor's degree or four-year teachers college degree
71.1	( ) 4.	Master's degree
9.1	( ) 5.	Professional Diploma (Master's + 30 graduate hours)
2.5	( ) 6.	Doctor's degree
.4	( ) 7.	Other (specify) ____________________

107. About how many credit hours in education courses do you have?

1.6	( ) 1.	0-9
1.5	( ) 2.	10-19
8.4	( ) 3.	20-29
21.2	( ) 4.	30-39
20.9	( ) 5.	40-49
46.4	( ) 6.	50 or more

108. Which of the following honorary degrees do you hold if any?

99.3	( ) 1.	No honorary degree
.1	( ) 2.	Litt. D. (Doctor of Literature or Letters)
.2	( ) 3.	LL. D. (Doctor of Laws)
-	( ) 4.	D. Sc. (Doctor of Science)
-	( ) 5.	Other (specify) ____________________
.5	( ) 6.	More than one of the above listed degrees

PROJECT TALENT

A National Inventory of Aptitudes and Abilities

SCHOOL QUESTIONNAIRE

Guidance Program

General Directions:

This questionnaire has questions relating to your guidance program and facilities. Place your answers in the booklet. Answer each question as accurately as possible, but do not spend too much time on any one question. ALL ANSWERS ARE STRICTLY CONFIDENTIAL.

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University of Pittsburgh
Pittsburgh, Pennsylvania

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Name of school ____________________
City ____________________
State ____________________
School code number ____________________

To the Counselor: This questionnaire will be used in connection with Project TALENT. Please complete this form and give it to your principal. For each question, answer as indicated; place an X in the parentheses next to the number or write your answer in the space provided.

1. Does your school have a guidance program in which one or more persons is officially assigned, part or full time, to working with individual students?

A. YES

B. NO

IF YOU ANSWERED YES:

2. How many persons in your school are assigned full time to guidance?

( ) 1. None
( ) 2. 1
( ) 3. 2
( ) 4. 3
( ) 5. 4
( ) 6. 5
( ) 7. 6
( ) 8. 7
( ) 9. 8
( ) 10. 9 or more

3. How many persons in your school devote part-time to guidance?

( ) 1. None
( ) 2. 1
( ) 3. 2
( ) 4. 3
( ) 5. 4
( ) 6. 5
( ) 7. 6
( ) 8. 7
( ) 9. 8
( ) 10. 9 or more

GO ON TO QUESTION 4

IF YOU ANSWERED NO:

2. Have you any plans to install a counseling or guidance program?

( ) 1. Yes, in the near future
( ) 2. Yes, but not for at least two years
( ) 3. No

3. Who is responsible for guidance activities in your school? (Mark one answer.)

( ) 1. No one
( ) 2. A school system counselor
( ) 3. Teachers handle questions brought to them by students.
( ) 4. The principal
( ) 5. Other (specify) ____________________

4. What is the principal reason that a guidance program has not been established? (Mark one answer.)

( ) 1. Administration has not approved a program
( ) 2. Lack of funds
( ) 3. Other (specify) ____________________

NOW SKIP TO QUESTION 20, PAGE 9

4. How many years ago did your school organize a guidance program?

( ) 1. Less than 1 year ago (this school year)
( ) 2. 1 year ago
( ) 3. 2 years ago
( ) 4. 3 years ago
( ) 5. 4 years ago
( ) 6. 5 years ago
( ) 7. 6 or 7 years ago
( ) 8. 8 or 9 years ago
( ) 9. 10 to 15 years ago
( )10. 16 years ago or longer

5. How adequate are the facilities for guidance which are available to you? Mark each blank as follows:

1. Unavailable
2. Minimal or inadequate
3. About adequate for present needs
4. Fully meets present needs

a. ___ Private room especially for counseling
b. ___ Testing space
c. ___ File of available tests
d. ___ Space for guidance services
e. ___ Budget for guidance services
f. ___ Appropriate file for confidential records
g. ___ Clerical assistance

6. What facilities for referral are available in your school and community? Place an X in the parentheses for each that applies.

1. Available in our school
2. Available in the school system
3. Available in the community
4. Available only after a long waiting period

	1	2	3	4
a. Psychiatrist	( )	( )	( )	( )
b. Psychologist	( )	( )	( )	( )
c. Social worker	( )	( )	( )	( )
d. Child guidance clinic	( )	( )	( )	( )
e. Speech clinic	( )	( )	( )	( )
f. Reading clinic	( )	( )	( )	( )
g. Other (specify)	( )	( )	( )	( )
___	( )	( )	( )	( )
___	( )	( )	( )	( )

7. How long do counseling conferences with students last. Please estimate the per cent of conferences that last the following amounts of time.

a. ___% Less than 20 minutes
b. ___% 20 - 30 minutes
c. ___% 31 - 45 minutes
d. ___% 46 - 60 minutes
e. ___% More than 1 hour
100% - Total

8. How frequently do students bring each of these topics to a counselor for discussion or advice? Mark your answers in the spaces below.

1. Very frequently
2. Frequently
3. Occasionally
4. Very rarely
5. Never

a. ___ Dissatisfaction over low grades
b. ___ Students with high grades who want extra academic work
c. ___ Dating problems
d. ___ Personality problems
e. ___ Problems with other students
f. ___ Course planning
g. ___ Vocational planning
h. ___ Plans for further education or training
i. ___ Financial problems in high school
j. ___ Financing education after high school
k. ___ Other (specify) ___

9. Under what conditions are counseling interviews held with individual students? Mark your answers as follows:

1. Yes
2. Under some circumstances, as explained below.
3. No

a. ___ If the student requests it
b. ___ As part of a course in Occupational Planning
c. ___ If a teacher or principal requests it
d. ___ If a parent requests it
e. ___ At the counselor's discretion
f. ___ Periodically with all students
g. ___ Other (specify) ___

10. Under what circumstances are conferences held with parents? Mark your answers as follows:

1. This is not done
2. Routinely
3. For special problems only

a. ___ If the parent requests it
b. ___ If the student requests it
c. ___ If a teacher or principal requests it
d. ___ If a counselor feels it necessary

11. For each of the following, how often does the counselor call the student's parents for a conference? Mark your answers as follows:

1. Always
2. Frequently
3. Occasionally
4. Rarely
5. Never

a. ___ For disciplinary reasons
b. ___ Low grades
c. ___ High grades
d. ___ Personality problems
e. ___ Medical problems
f. ___ Attendance
g. ___ College plans
h. ___ Job plans
i. ___ This is the method used for reporting academic progress
j. ___ Other (specify) ___

12. For each of the following activities, mark your answers as follows:

1. The counselor performs it regularly, as a major responsibility
2. The counselor performs it occasionally, but not regularly
3. The counselor never performs it

a. ___ Counseling with students not getting along with classmates
b. ___ Helping students make the most of their potentialities
c. ___ Assisting students in making valid self-appraisal
d. ___ Administering testing program
e. ___ Teaching
f. ___ Counseling with handicapped
g. ___ Research
h. ___ Non-counseling administrative duties
i. ___ Clerical work
j. ___ Helping individual students plan their high school programs
k. ___ Counseling individual students on college entrance requirements, choice of college, etc.
l. ___ Counseling with individual students on subject-matter difficulties
m. ___ Counseling with individual students achieving below the acceptable scholastic level
n. ___ Counseling with individual students regarding plans for financing college education

Continued on next page.

12.- cont'd.

For each of the following activities, mark your answers as follows:

1. The counselor performs it regularly, as a major responsibility
2. The counselor performs it occasionally, but not regularly
3. The counselor never performs it

o. ___ Counseling individual students on jobs and occupations
p. ___ Helping students find part-time jobs
q. ___ Helping graduates find jobs
r. ___ Counseling with individual students on personal or family problems
s. ___ Identifying seriously disturbed students having severe emotional problems, and referring them elsewhere for help
t. ___ Counseling with disturbed students having emotional problems
u. ___ Counseling with students over minimum age who wish to drop out of school
v. ___ Counseling with students under minimum age who wish to drop out of school
w. ___ Conducting group orientation sessions for new students
x. ___ Conducting group discussions on jobs and occupations
y. ___ Conducting group discussions on colleges and other training after high school
z. ___ Conducting group discussions on adjustment of personality
aa. ___ Conducting group discussions on military obligations
bb. ___ Follow-up work with individuals to determine the results of counseling
cc. ___ Counseling with gifted students
dd. ___ Counseling with students having problems with teachers
ee. ___ Other (specify) ___

13. What is the policy of your school on reporting test results to students' parents?

( ) 1. No reports are given
( ) 2. Only interpretive report given
( ) 3. Test scores are reported in addition to an interpretive report

RECENT CHANGES IN THE PROGRAM

Counseling programs in many schools have undergone a great deal of change in recent years. 'The following questions are about ways in which the counseling program in your school has changed.

14. Have counseling, guidance, or testing services in your school been increased in recent years?

( ) 1. No
( ) 2. Yes, in the past two years
( ) 3. Yes, since about 3 or 4 years ago
( ) 4. Yes, since about 5 or 6 years ago
( ) 5. Yes, since about 7 to 10 years ago

IF YOUR ANSWER WAS NO, PLEASE SKIP TO NUMBER 16.

15. In which of the following ways has your school's counseling program changed in the last 2 years? Mark an X in the parentheses under Yes or No for each item.

	Yes	No	
a.	( )	( )	We have more full-time counselors.
b.	( )	( )	We have fewer full-time counselors.
c.	( )	( )	We have more part-time counselors.
d.	( )	( )	We have fewer part-time counselors.
e.	( )	( )	Our counselors have received additional training.
f.	( )	( )	Clerical personnel have been added to relieve counselors of these routines.
g.	( )	( )	Our counselors have more personal contact with students.
h.	( )	( )	Our counselors have more personal contact with parents.
i.	( )	( )	We do more follow-up work on students.
j.	( )	( )	We use more standardized tests.
k.	( )	( )	We use fewer standardized tests.
l.	( )	( )	We participate in national testing programs.
m.	( )	( )	We participate in state or regional testing programs.
n.	( )	( )	We maintain more detailed records of students' progress.
o.	( )	( )	We keep fewer records.
p.	( )	( )	We make more effective use of test results.
q.	( )	( )	We have started to keep cumulative records.
r.	( )	( )	We have more referral services available.
s.	( )	( )	We are doing some research.
t.	( )	( )	Other (specify) ____________________
			____________________
u.	( )		There has been no change

PLANS FOR EXPANSION

Some schools are planning to expand their counseling facilities in the future. The next questions are about plans for expansion of counseling, guidance, or testing services.

If your school has no plans for expanding these services, please mark No for Number 16 and skip to Number 20.

16. Is your school planning to expand counseling, guidance, or testing services within the near future?

( ) 1. No
( ) 2. Yes, and will probably get under way within a year
( ) 3. Yes, but will probably not get under way for one or two years
( ) 4. Yes, but will probably not get under way for three or four years
( ) 5. Yes, but will probably not get under way for at least five years

17. To what extent has your school developed plans for expanding guidance facilities? (Mark one.)

( ) 1. Administrative approval for expansion has been obtained and expansion is in process, or will soon be carried out.
( ) 2. Careful consideration is being given to a plan for expansion by administrative authorities.
( ) 3. A plan for expansion is being formulated and will be given administrative consideration at a later date.
( ) 4. Expansion of services has been discussed, but a formal plan is not yet under consideration.
( ) 5. Expansion of services has been given some thought, but nothing very definite has been done.

18. To what extent has your school developed plans for expanding testing facilities? (Mark one.)

( ) 1. Administrative approval for expansion has been obtained and expansion is in process, or will soon be carried out.
( ) 2. Careful consideration is being given to a plan for expansion by administrative authorities.
( ) 3. A plan for expansion is being formulated and will be given administrative consideration at a later date.
( ) 4. Expansion of services has been discussed, but a formal plan is not yet under consideration.
( ) 5. Expansion of services has been given some thought, but nothing very definite has been done.

19. Are any of the following included in your plans for expansion? Mark an X in the parentheses under Yes or No for each item.

	Yes	No	
a.	( )	( )	Additional full-time counselors
b.	( )	( )	Additional part-time counselors
c.	( )	( )	More time made available for counseling
d.	( )	( )	Additional clerical staff
e.	( )	( )	Courses in occupational information
f.	( )	( )	Increased use of standardized tests
g.	( )	( )	More extensive follow-up after graduation or withdrawal
h.	( )	( )	More contact with parents
i.	( )	( )	More detailed records of students' performance
j.	( )	( )	Other (specify) ____________________
k.	( )	( )	____________________

THE USE OF TESTS

20. Are standardized tests or inventories used in your school?

( ) 1. Yes
( ) 2. No

IF YOU ANSWERED NO TO THIS QUESTION, SKIP TO NUMBER 27.

21. In what grades does your school give each of the following types of tests to all students. Place an X in the parentheses for each that applies.

		9	10	11	12
a.	Individual intelligence test	( )	( )	( )	( )
b.	Paper-and-pencil intelligence test	( )	( )	( )	( )
c.	Multiple aptitude batteries	( )	( )	( )	( )
d.	Standardized achievement tests	( )	( )	( )	( )
e.	Interest inventories	( )	( )	( )	( )
f.	Personality or adjustment inventories	( )	( )	( )	( )
g.	Locally devised system-wide tests or inventories (may include above types)	( )	( )	( )	( )
h.	Special aptitude tests - art, music, language, etc.	( )	( )	( )	( )
i.	Tests for scholarship competitions	( )	( )	( )	( )
j.	Other (specify) ____________________	( )	( )	( )	( )
	____________________	( )	( )	( )	( )

22. In what high school subjects are standardized achievement tests given? Mark your answers as follows:

1. Regularly, on schedule
2. Frequently
3. Occasionally
4. Never

a. ___ English
b. ___ Math
c. ___ Physical Sciences
d. ___ Social Sciences
e. ___ Foreign Languages
f. ___ Reading
g. ___ Spelling
h. ___ Other (specify)____________________

23. Which of the following kinds of tests are administered to groups of high school students (but not to all students) under special circumstances? Mark Yes for those that apply and No for those that do not.

	Yes	No	
a.	( )	( )	Paper-and-pencil intelligence test
b.	( )	( )	Multiple aptitude batteries
c.	( )	( )	Standardized achievement tests
d.	( )	( )	Interest inventories
e.	( )	( )	Personality or adjustment inventories
f.	( )	( )	Locally devised system-wide tests or inventories
g.	( )	( )	Special aptitude tests - art, music, language, etc.
h.	( )	( )	Tests associated with contests
i.	( )	( )	Employment test batteries
j.	( )	( )	Tests for scholarship competitions
k.	( )	( )	Tests for college entrance
l.	( )	( )	Other (specify)____________________
			____________________

24. Which of the following kinds of tests are administered to the individual student (but not to all students)? Mark Yes for those that apply and No for those that do not.

	Yes	No	
a.	( )	( )	Individual intelligence test
b.	( )	( )	Projective personality test
c.	( )	( )	Personality or adjustment inventories
d.	( )	( )	Reading tests
e.	( )	( )	Speech tests
f.	( )	( )	Special aptitude tests - art, music, language, etc.
g.	( )	( )	Other (specify)____________________
			____________________

25. For which of the following purposes are test or inventory results used in your school? Mark Yes for those that apply and No for those that do not.

	Yes	No	
a.	( )	( )	To meet state requirements
b.	( )	( )	To aid in establishing homogeneous classes according to ability in each subject
c.	( )	( )	To aid in establishing homogeneous groups or tracks in each grade
d.	( )	( )	To aid in placing students in the various curricula (business, vocational, college preparatory)
e.	( )	( )	As a screening device for admission to your school
f.	( )	( )	For comparison of your school with others in the nation
g.	( )	( )	As measure of achievement during the year
h.	( )	( )	To evaluate curricula
i.	( )	( )	To measure the students' growth
j.	( )	( )	To measure the school's growth
k.	( )	( )	To help the student gain a better understanding of himself
l.	( )	( )	As an aid in counseling
m.	( )	( )	Other (specify)____________________

26. To what extent are test or inventory results used for each of these purposes? Mark your answers as follows:

1. Very frequently
2. Frequently
3. Occasionally
4. Never

a. ___ To diagnose reading, arithmetic, spelling, or other learning difficulties
b. ___ To diagnose personality or adjustment difficulties
c. ___ To advise the students on choice of specific high school curriculums
d. ___ To advise the students on choice of specific high school subjects
e. ___ For diagnosis of underachievers or other scholastic problems
f. ___ To counsel potential high school dropouts
g. ___ As a basis for recommending transfer to schools for special abilities (vocational, art, music, etc.)
h. ___ As an aid in placing students in jobs
i. ___ As an aid for recommending students for jobs
j. ___ As a basis for recommending transfer to schools for mental defectives
k. ___ To provide information to professional workers (social workers, physicians, welfare agencies, etc.) concerned with the student's welfare
l. ___ To provide information to students on their potentiality for college
m. ___ To provide information to students on which they may base their choice of a college curriculum
n. ___ To provide information to students on their occupational potential

26. Cont'd.

o. ___ To provide information to students on their personality and adjustment
p. ___ To aid in interpreting the student's needs to his teachers
q. ___ To provide information on the student to prospective employers
r. ___ To provide information on the student to colleges or other post high school educational institutions
s. ___ To provide information to scholarship granting agencies
t. ___ To provide information to the student for self-appraisal
u. ___ Other (specify)____________________

27. Does your school have available the following materials for the students' use? Mark your answers as follows:

1. No
2. Yes, but minimal or inadequate
3. Yes, fairly complete, up-to-date, and well organized
4. Yes, very complete, up-to-date, and well organized

a. ___ Catalogs of colleges within commuting distance
b. ___ Catalogs of colleges beyond commuting distance
c. ___ Catalogs for vocational or industrial schools
d. ___ Printed matter about scholarships, loan plans, etc.
e. ___ Printed matter about military service
f. ___ Printed matter about occupational opportunities
g. ___ Printed matter about recreational and cultural opportunities in the community
h. ___ Printed matter about placement organizations (e.g., USES)
i. ___ Other (specify)____________________

28. Which of the following methods are used to present information to students on colleges, scholarships, military, and occupational opportunities? Place an X in the appropriate parentheses to indicate your answer.

	Col	Sch	Mil	Occ	
a.	( )	( )	( )	( )	Talks by the counselor
b.	( )	( )	( )	( )	Talks by the faculty members (other than counselor)
c.	( )	( )	( )	( )	Talks by authorities and experts external to the school system
d.	( )	( )	( )	( )	Films and audio-visual means
e.	( )	( )	( )	( )	Bulletin board displays (posters, pictures, etc.)
f.	( )	( )	( )	( )	Printed material (pamphlets, books, floaters, etc.)
g.	( )	( )	( )	( )	Group discussion sessions
h.	( )	( )	( )	( )	Occupational information library
i.	( )	( )	( )	( )	Individual conferences
j.	( )	( )	( )	( )	Career days

28. Cont'd.

	Col	Sch	Mil	Occ	
k.	( )	( )	( )	( )	Visits to campuses
l.	( )	( )	( )	( )	Visits to industries
m.	( )	( )	( )	( )	Talks by company recruiters
n.	( )	( )	( )	( )	Talks by military service recruiters
o.	( )	( )	( )	( )	Other (specify)____________________

29. Which of the following topics are offered as a full course or part of a course at your school? Indicate whether it is required, an elective, or not offered or whether it is a full course or part of a course. Mark even if the title differs somewhat, if you feel the content is the same.

	Not Offered	Req.	Elect.	Full Course	Part of Course	
a.	( )	( )	( )	( )	( )	Life Adjustment
b.	( )	( )	( )	( )	( )	Occupational Information
c.	( )	( )	( )	( )	( )	Mental Health or Mental Hygiene
d.	( )	( )	( )	( )	( )	Self-appraisal
e.	( )	( )	( )	( )	( )	Personality Development
f.	( )	( )	( )	( )	( )	How to Study
g.	( )	( )	( )	( )	( )	Family Living

(Go on to Question 30 on page 14.)

30. Outstanding talent: List the names of all students in your school who have displayed truly outstanding talent in some area. Some examples of talents are music, art, dramatics, dancing, writing, public speaking or debate, athletics, leadership, science, mechanics, electronics, etc. Include any other talents that occur to you. It is anticipated that only a small number of a typical group of students will be listed here. Under comments, list any evidence of talent such as winning a competitive art award, etc.

Name	Grade	Special Talent	Comments

Continue on the next page, if necessary.

A National Inventory of Aptitudes and Abilities

SCHOOL QUESTIONNAIRE

Counselor's Questionnaire

General Directions:

This questionnaire is to be filled out by all counselors and guidance people who devote at least twenty per cent of their time to counseling and guidance. Place your answers in the booklet. Answer each question as accurately as possible, but do not spend too much time on any one question. ALL ANSWERS ARE STRICTLY CONFIDENTIAL.

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University of Pittsburgh
Pittsburgh, Pennsylvania

Printed in U.S.A.

Name of school ____________________
City ____________________
State ____________________
School code number ____________________

To the Counselor: This questionnaire will be used in connection with Project TALENT. Please complete this form and give it to your principal. For each question, answer as indicated; place an X in the parenthesis next to the number or write your answer in the space provided.

Sex

( ) 1. Male
( ) 2. Female

Age

( ) 1. 20 - 29
( ) 2. 30 - 39
( ) 3. 40 - 49
( ) 4. 50 - 59
( ) 5. 60 or over

1. Are you employed full-time in this school?

( ) 1. Yes
( ) 2. No

If you answered Yes (A), skip to question 4.

2. Do you serve as counselor for any school other than this one?

( ) 1. No
( ) 2. Yes, 1 other
( ) 3. Yes, 2 others
( ) 4. Yes, 3 others
( ) 5. Yes, 4 or more others

3. Please describe your occupation fully.

____
____

4. For how many months work is your salary paid?

( ) 1. 8
( ) 2. 9
( ) 3. 10
( ) 4. 11
( ) 5. 12

5. Current salary in present position for the school year.

( ) 1. Less than $2000
( ) 2. $2000 - $2999
( ) 3. $3000 - $3999
( ) 4. $4000 - $4999
( ) 5. $5000 - $5999
( ) 6. $6000 - $6999
( ) 7. $7000 - $7999
( ) 8. $8000 - $8999
( ) 9. $9000 - $9999
( ) 10. $10,000 or more

6. Duties currently performed. Mark the per cent of time you spend on each. Your answers should total 100 per cent.

a. ____% Teaching
b. ____% Home room teacher
c. ____% Administration
d. ____% Counseling and guidance
e. ____% Supervision of other counselors
f. ____% Other (specify) ____________
g. ____% ____________________
h. ____% ____________________
100% - Total

7. On the average, what per cent of your counseling time is spent in each of the following functions? Your answers should total 100%.

a. ____% Counseling with individual students
b. ____% Counseling with parents
c. ____% Counseling with groups
d. ____% Testing

Continued on the next page.

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7 - cont'd

e. ____% Discussions with teachers or staff members
f. ____% Preparation of reports and studying cases
g. ____% Clerical work
h. ____% Supervision
i. ____% Other (specify)____________
j. ____% ____________________
k. ____% ____________________
100% - Total

8. Have you attended professional society meetings of guidance or counseling personnel? Place an X next to those that apply.

a. ( ) National meetings
b. ( ) Regional meetings
c. ( ) State meetings
d. ( ) City meetings
e. ( ) No

9. Teaching experience

( ) 1. None
( ) 2. Less than 1 year
( ) 3. 1 or 2 years
( ) 4. 3 or 4 years
( ) 5. 5 to 10 years
( ) 6. More than 10 years

10. Counseling and guidance experience

( ) 1. Less than 1 year
( ) 2. 1 or 2 years
( ) 3. 3 or 4 years
( ) 4. 5 to 10 years
( ) 5. More than 10 years

11. Education (Place an X next to the highest one)

( ) 1. High School
( ) 2. Some college
( ) 3. Bachelor's degree
( ) 4. Bachelor's degree plus credit toward master's degree
( ) 5. Master's degree
( ) 6. Master's degree plus credit toward doctor's degree
( ) 7 Doctor's degree

12. If you have one or more college degrees, answer the following question. If you did not complete college, skip to item 13.

How many courses have you taken in each of the following areas? Put a number in the appropriate box to indicate the number of semester hours credit, both graduate and undergraduate, you have in each area. Please estimate this as carefully as you can, even if you are not sure.

Number of hours		Area	Typical course titles
Undergraduate	Graduate		
a. ____	b. ____	Counseling	Techniques of Counseling; Introduction to Counseling and Guidance; Case Studies in Counseling; Tools and Techniques of Counseling; Theories and Techniques of Counseling; Counseling High School Pupils; Parent Counseling; Counseling Interviews; etc.
c. ____	d. ____	Analysis of the Individual	Individual Testing; Analysis of the Individual; Psychological Measurements; Tests and Measurements; Diagnostic Testing; Group Tests and Techniques; Mental Measurements; Personality Testing; etc.
e. ____	f. ____	Educational & Occupational Information	Occupational Information and Guidance; Educational and Occupational Information; Occupational Information; Occupational Trends; Informational Services; Vocational Guidance; Occupational Analysis; etc.
g. ____	h. ____	Philosophy & Principles	Principles of Guidance; Philosophy of Guidance; Principles & Practices of Guidance; Guidance in the Elementary Schools; Basic Principles of Guidance; Basic Procedures in Student Personnel Work; Philosophy of Education; Introduction to Guidance; etc.
i. ____	j. ____	Organization & Administration	Organization & Administration of Guidance; Programs in Higher Education; School Administration; Curriculum Development; etc.
k. ____	l. ____	Methods of Research	Research in Education; Statistical Methods in Education and Psychology; Statistics; Methods of Research; Educational Statistics; Methods in Educational Research; Research Design; etc.
m. ____	n. ____	Psychological Foundations	Psychology of Adolescence; Child Development; Psychological Foundations in Education, Growth, and Development; Psychology of Learning; Mental Hygiene; Theories of Personality; Social Psychology; Clinical Practices; Abnormal; etc.
o. ____	p. ____	Practicum	Internship; Field Work; Practicum in Counseling; Laboratory in Counseling; Clinical Practices; etc.
q. ____	r. ____	Group Procedures	Group Procedures; Group Techniques in Guidance; Group Guidance; Group Dynamics; Student Personnel Work; Group Processes; etc.
s. ____	t. ____	Sociological Foundations	Foundations of Sociology; Social Work Methods; etc.
u. ____	v. ____	Placement	Principles of Placement; Techniques of Follow-ups and Placement; Community-Welfare Organizations; Vocational Information and Placement; etc.
w. ____	x. ____	Follow-up & Evaluation	Seminar in Student Personnel; Measurement & Evaluation; Evaluation; Laboratory in Evaluation Instruments; etc.
y. ____	z. ____	Economic Foundations	Foundations of Economics; Economics; etc.

Continued on the next page.

13. Which of the specialized periodicals in the guidance field do you read? Mark your answers as follows:

    1. Read regularly
    2. Read occasionally
    3. Read rarely
    4. I do not read this periodical.

a. ____ Personnel and Guidance Journal
b. ____ National Vocational Guidance Quarterly
c. ____ The School Counselor
d. ____ The Journal of the National Association of Woman Deans and Counselors
e. ____ NEA Journal
f. ____ Other (specify) ________________________________

14. Professional memberships (X those that apply)

( ) 1. APGA member
Divisional status:
( ) 2. ASCA (Type membership : ________________)
( ) 3. NVGA (Type Membership: ________________)
( ) 4. APA
( ) 5. Other (specify) __________ __________________

15. Do you hold any certificates or licenses in counseling?

a. ( ) No
b. ( ) State (Type: ____________)
c. ( ) City or County (Type: ________________)
d. ( ) Other (specify) __________ ________________

16. How did you get your training in counseling?

( ) 1. Through specific training and education in college
( ) 2. Training in the school system (describe) ________________
( ) 3. On the job training (describe) ________________________
( ) 4. Other (specify) ________________________________

17. What do you think are the three most important contributions a counselor can make to the lives of his students? Number your answers 1 for the most important, 2 for the next most important, and 3 for the third most important.

a. ____ Help them make educational and vocational plans
b. ____ Help them solve personal problems
c. ____ Aid them in increasing their self-understanding
d. ____ Help them develop their sense of values
e. ____ Help them make effective use of their abilities
f. ____ Help them adjust to school life and its requirements
g. ____ Assist them in getting along with others
h. ____ Other (specify) ________________________________

18. If you were a full-time counselor with about 300 students assigned to you, and were free to develop your own schedule, how would you allocate your time? What kinds of activity would have to be included, and about what fraction of the total time should be devoted to each?

19. Suppose a student comes to you with the following problem:

He is an excellent student, a senior, making his best grades in English and History. He has not considered college because his parents cannot afford to send him any money. He has about $400 saved from part time jobs he has held during the last three years. The nearest college is 150 miles away. He wonders what to do after he graduates. The tests he has taken during his school years indicate that he has a high academic ability in languages and social sciences.

Describe how you would go about counseling the boy.

Appendix B

LIST OF PROJECT TALENT HIGH SCHOOLS TESTED MARCH - JUNE, 1960

ALABAMA

ALPINE--Winterboro HS
AUBURN--Auburn HS
Drake HS
BIRMINGHAM--Woodlawn HS
CHILDERSBURG--Childersburg HS
FIVE POINTS--Five Points Colored HS
GADSDEN--Emma Sansom HS
GREENVILLE--Greenville Training HS
HEFLIN--Heflin Training School
HUNTSVILLE--Oakwood College Academy
JACK--Zion Chapel HS
JASPER--Walker County Training School
LAFAYETTE--Chambers County Training School
LANETT--Lanett HS
LEROY--Leroy HS
PISGAH--Pisgah HS
PLANTERSVILLE--Dallas County HS
RED LEVEL--Red Level HS
ROCKFORD--Coosa County HS
SATSUMA--Satsuma HS
TUSKEGEE--Tuskegee Institute HS
VINCENT--Vincent HS
WOODLAND--Woodland HS

ARIZONA

DOUGLAS--Douglas HS
ST. MICHAEL--St. Michael's HS
THATCHER--Thatcher HS

ARKANSAS

BATESVILLE--Batesville HS
DUMAS--Reed HS
HECTOR--Hector HS
HELENA--Lake View HS
LUXORA--Luxora HS
MAGNOLIA--Magnolia HS
MARMADUKE--Marmaduke HS
MELBOURNE--Melbourne HS
MONETTE--Childress HS
MT. HOLLY--New Hope HS
MT. VERNON--Mt. Vernon HS
MOUNTAIN VIEW--Mountain View HS
PINE BLUFF--Coleman HS
POTTSVILLE--Pottsville HS
SMACKOVER--Smackover HS
TEXARKANA--Washington HS
WILSON--Wilson Trade HS

CALIFORNIA

ANAHEIM--Marywood HS
ARLINGTON--Divine Word Seminary
BURBANK--Burbank SHS
CARLSBAD--Army and Navy Academy
CARMEL--Carmel HS
CENTRAL VALLEY--Central Valley HS
CHULA VISTA--Chula Vista HS
CROCKETT--John Swett Unified HS
DURHAM--Durham HS
FAIRFIELD--Armijo Joint-Union HS
LE GRAND--Le Grand Union HS
LOS ANGELES--Our Lady of Loretto HS
Woodrow Wilson HS
McARTHUR--Fall River Mills HS
MERCED--Our Lady of Mercy School
MODESTO--Modesto Union Academy
MORGAN HILL--Live Oak Union HS
NEEDLES--Needles Union HS
PORTOLA--Portola J-SHS
REDLANDS--Redlands HS
SACRAMENTO--St. Francis HS
SAN FRANCISCO--Mercy HS
SAN MATEO--Junipero Serra HS
SANTA CRUZ--Holy Cross HS
WILMINGTON--Phineas Banning HS
YUCAIPA--Yucaipa J-SHS

COLORADO

BETHUNE--Bethune HS
CROOK--Logan County Branch HS
DENVER--Cathedral HS
North SHS
DOLORES--Dolores HS
JOES--Liberty HS
LAFAYETTE--Lafayette HS
MORRISON--Bear Creek HS
NUCLA--Nucla HS
STEAMBOAT SPRINGS--Steamboat Springs HS

CONNECTICUT

COLLINSVILLE--Canton HS
HARTFORD--Weaver HS
KENT--Kent School
LITCHFIELD--Litchfield HS
MERIDEN--Orville H. Platt HS
NEW LONDON--St. Bernard's HS
POMFRET--Pomfret School
PUTNAM--Putnam Catholic Academy
SOUTHINGTON--Southington HS

DELAWARE

BRIDGEVILLE--Bridgeville HS
DELAWARE CITY--Delaware City HS

FLORIDA

CENTURY--Century HS
FELLSMERE--Fellsmere HS
FT. LAUDERDALE--Central Catholic HS
GAINESVILLE--Gainesville HS
GREENVILLE--Greenville HS
JACKSONVILLE--New Stanton HS
LAKE BUTLER--Union County HS
MIAMI--B. T. Washington HS
MULBERRY--Mulberry J-SHS
OCALA--Belleview-Santos HS
PALMETTO--Palmetto HS
PENSACOLA--Escambia HS
Pensacola HS
SANFORD--Seminole HS
YULEE--Yulee HS

GEORGIA

ATLANTA--Sylvan Hills HS
AUGUSTA--Aquinas HS
BAINBRIDGE--Bainbridge HS
CAIRO--Washington Consolidated HS

CLAXTON--Evans County HS
DUBLIN--Dublin HS
FOREST PARK--William A. Fountain HS
FORSYTH--Hubbard HS
FORT VALLEY--H. A. Hunt HS
GAINESVILLE--South Hall HS
HAWKINSVILLE--J. L. Bozeman Training Institute
METTER--Candler County Training School
NEWNAN--Newnan-Coweta Central HS
OCILLA--Irwin County HS
PERRY--Houston County Training School
RICHMOND HILL--George W. Carver HS
ROSSVILLE--Rossville HS
SMYRNA--Campbell HS
SPRINGFIELD--Effingham County HS
ZEBULON--Pike County HS

HAWAII

HONOLULU--University HS
WAHIAWA, OAHU--Leilehua High and Int. School
WAILUKU, MAUI--Baldwin HS

IDAHO

BOISE--Boise Junior Academy
GOODING--Gooding HS
KENDRICK--Kendrick SHS
WALLACE--Our Lady of Lourdes Academy

ILLINOIS

ABINGDON--Abingdon SHS
ALTON--Western Military Academy
ARCOLA--Arcola HS
AURORA--Marmion Military Academy
BELVIDERE--Belvidere HS
CARRIER MILLS--Carrier Mills HS
CHAMPAIGN--Champaign SHS
CHICAGO--Amundsen HS
Austin HS
Carver HS
Crane HS
DuSable HS
Englewood HS
Farragut HS
Fenger HS
Francis W. Parker School
Harrison HS
Hirsch HS
Hyde Park HS
Kelly HS
Kelvyn Park HS
St. Benedict HS
South Shore HS
Steinmetz HS
Sullivan HS
Taft HS
Tuley HS
Wells HS
Wendell Phillips HS
ELLSWORTH--Ellsworth HS
FISHER--Fisher HS
FRANKLIN PARK--East Leyden HS
FREEPORT--Aquin Central Catholic HS
GORHAM--Gorham HS
JOHNSTON CITY--Johnston City HS
LEMONT--St. Vincent DePaul Seminary
LEROY--LeRoy HS
MACOMB--Macomb SHS
MARISSA--Marissa Township HS
MCHENRY--McHenry Com. HS
MELROSE PARK--Walther Lutheran HS
METROPOLIS--Metropolis Com. HS
MONMOUTH--Monmouth HS
MT. OLIVE--Mt. Olive HS
MT. CARMEL--Mt. Carmel HS
MT. MORRIS--Mt. Morris HS
NORTHLAKE--West Leyden HS
OREGON--Oregon Com. HS
PAYSON--Seymore Com. HS - United School District No. 1
RED BUD--Precious Blood Institute
RIVERTON--Riverton HS
SESSER-Goode-Barren Township HS
SHANNON--Shannon Com. Unit HS
THOMPSONVILLE--Thompsonville Com. HS
VIOLA--Winola HS
WALNUT--Walnut HS
WITT--Witt HS
WOODHULL--Alwood HS
ZIEGLER--Ziegler Com. HS

INDIANA

ANDREWS--Dallas Township HS
BAINBRIDGE--Bainbridge HS
BATTLE GROUND--Battle Ground HS
DUNKIRK--Dunkirk HS
EAST GARY--Thomas A. Edison SHS
EVANSVILLE--Central HS
Reitz Memorial HS for Girls
GOSHEN--Goshen HS
GREENSBURG--Sandcreek HS
HANNA--Hanna HS
HARTFORD CITY--Hartford City HS
INDIANAPOLIS--Arsenal Tech. HS
Avon HS
LAWRENCEBURG--Lawrenceburg Consolidated HS
LOGANSPORT--Logansport HS
MADISON--Central HS
Madison HS
MARENGO--Marengo HS
MARION--Bennett HS
MARKLE--Union Center HS
MAXWELL--Hancock Central HS
MEXICO--Mexico HS
MITCHELL--Mitchell HS
NEW AUGUSTA--Pike Township HS
NEW CASTLE--New Castle HS
NEW GOSHEN--Fayette Township HS
PLAINVILLE--Epsom HS
SELMA--Center HS

IOWA

ADEL--Adel HS
ANTHON--Anthon-Oto Ind. HS
CHARLES CITY--Charles City Com. HS
CHARLOTTE--Charlotte Ind. HS
CLARENCE--Clarence Com. HS
DANBURY--Danbury Catholic HS
DENISON--Denison Com. HS
DOLLIVER--Dolliver Consolidated HS
ELDON--Cardinal Com. HS
GOLDFIELD--Goldfield Com. HS
GRISWOLD--Griswold Consolidated HS
GUTTENBERG--St. Mary's HS
LAKOTA--Lakota Consolidated HS
LAMONT--Lamont Consolidated HS
LARCHWOOD--St. Mary's HS
LE CLAIRE--Le Claire Ind. School
LE MARS--Gehlen HS
LIBERTY CENTER--Southeast Warren Com. HS
MONMOUTH--Monmouth Consolidated HS
MOULTON--Moulton Udell Com. School
MT. AYR--Mt. Ayr Com. HS
PAULLINA--Paullina HS
PROTIVIN--Rudolphinum HS
RENWICH--Boone Valley Com. HS
RICEVILLE--Riceville HS
TIPTON--Tipton Com. HS

KANSAS

ARKANSAS CITY--Arkansas City HS
BELOIT--St. John HS
BREWSTER--Brewster Consolidated HS
COLLYER--Collyer HS
CLAY CENTER--Clay County Com. HS
ELK CITY--Elk City HS
EUREKA--Eureka SHS
GREAT BEND--Great Bend HS
GREENLEAF--Greenleaf HS
HOXIE--Sheridan Com. HS
IOLA--Iola HS
OVERLAND PARK--Kansas City College and Bible School
PRETTY PRAIRIE--Pretty Prairie HS
RANDOLPH--Blue Valley HS
ROSALIA--Rosalia HS
SHAWNEE--St. Joseph's HS
SPEARVILLE--Windthorst HS

KENTUCKY

ALMO--Almo HS
AUBURN--Auburn HS

AUXIER--Auxier HS
BEVERLY--Red Bird Settlement HS
BLACKEY--Letcher HS
CLARKSON--Clarkson HS
CORBIN--Corbin SHS
St. Camillus Academy
DANVILLE--Kentucky School for the Deaf
ELKTON--Todd County HS
HARDINSBURG--Breckenridge County HS
HENDERSON--Douglass HS
LANGLEY--Maytown HS
LEXINGTON--Sayre School
LOUISVILLE--Holy Rosary Academy
MAYSVILLE--Maysville HS
MIDDLETOWN--Eastern HS
NAZARETH--Nazareth Academy
PIKEVILLE--Pikeville HS
PLEASANT VIEW--Pleasant View HS
SOUTH PORTSMOUTH--South Portsmouth HS
TYNER--Tyner HS
WARFIELD--Warfield HS
WHITESBURG--Whitesburg HS

LOUISIANA

BATON ROUGE--Catholic HS
COLFAX--Mary E. Graham HS
COLUMBIA--Columbia HS
CONVERSE--Oak Grove HS
DONALDSONVILLE--Lowery HS
EUNICE--Charles Drew HS
FRANKLIN--Franklin HS
GILBERT--Gilbert HS
GRAND CANE--Grand Cane HS
GRANT--Fairview HS
GRAYSON--Grayson HS
HAUGHTON--Haughton HS
HOUMA--Southdown HS
LAFAYETTE--Lafayette SHS
Paul Breaux HS
LAKE CHARLES--Landry Memorial HS
NEW ORLEANS--Mid-City Baptist School
St. Joseph's HS
OAK GROVE--Oak Grove HS
SPRINGHILL--Brown HS
TALLULAH--Reuben McCall HS
THIBODAUX--Thibodaux HS
WATERPROOF--Waterproof HS
ZACHARY--Zachary HS

MAINE

BANGOR--Bangor HS
John Baptist HS
CHERRYFIELD--Cherryfield Academy
GORHAM--Gorham HS
MADAWASKA--Madawaska HS
SACO--Thornton Academy
SOUTH BRISTOL--South Bristol HS
TENANTS HARBOR--St. George HS
YORK--York HS

MARYLAND

BALTIMORE--Fred. Douglass HS
Seton HS
CATONSVILLE--St. Charles College HS
EASTON--SS. Peter and Paul HS
ELLICOTT CITY--Howard County SHS
FREDERICK--St. John's Literary Institute
GREAT MILLS--Great Mills SHS
LAUREL--Pallotti HS
NEWARK--Worcester J-SHS
OLDTOWN--Oldtown J-SHS
PARKVILLE--Parkville SHS
UNION BRIDGE--Francis Scott Key J-SHS

MASSACHUSETTS

BARNSTABLE--Barnstable Trade School
BOSTON--Hyde Park HS
BURLINGTON--Burlington J-SHS
CHESTNUT HILL--Beaver Country Day School
The Rivers Country Day School
DEDHAM--Ursuline Academy
DORCHESTER--Monsignor Ryan Mem. HS
HUDSON--Hudson Catholic HS
IPSWICH--Sacred Heart Juniorate
MILTON--Fontbonne Academy
NORTH ANDOVER--Brooks School
QUINCY--Quincy Trade School
ROXBURY--Mission Church HS--Girls
SAUGUS--Saugus HS
SOMERVILLE--Somerville HS
SWAMPSCOTT--Swampscott HS
TYNGSBORO--Academy of Notre Dame
UXBRIDGE--Uxbridge HS
WEST SPRINGFIELD--West Springfield HS
WESTON--Weston HS
WESTWOOD--Westwood J-SHS
WEYMOUTH--East Weymouth HS
East Weymouth Voc. HS
WINCHENDON--Murdock HS
WORCESTER--St. John's Prep. School

MICHIGAN

ADRIAN--St. Joseph Academy
ALMA--Alma HS
BARRYTON--Barryton Rural HS
BENTON HARBOR--Benton Harbor HS
BIRCH RUN--Birch Run Area HS
CARO--Caro HS
CLIMAX--Climax-Scotts Com. HS
DELTON--Delton Kellogg HS
DETROIT--Benedictine HS
Mumford HS
St. Agatha HS
St. Anne's HS
DUNDEE--Dundee HS
EAST DETROIT--East Detroit HS
ELKTON--Elkton HS
ESSEXVILLE--St. John HS
GRAND RAPIDS--Godwin-Christian HS
Plymouth HS
IDA--Ida HS
IMLAY CITY--Imlay City HS
IONIA--SS. Peter and Paul Academy
LUDINGTON--St. Simon HS
LYONS--Lyons-Muir Com. School
MARCELLUS--Marcellus HS
MASON--Mason HS
MIDDLEVILLE--Thornapple Kellogg HS
OAK PARK--Oak Park SHS
PERRY--Perry HS
PETERSBURG--Summerfield HS
PEWAMO--Pewamo HS
ROSEVILLE--Sacred Heart HS
SOUTHFIELD--Southfield HS
WATERVLIET--Watervliet HS
WYANDOTTE--Our Lady of Mt. Carmel HS

MINNESOTA

AUSTIN--Queen of Angels HS
BRAHAM--Braham HS
BROWERVILLE--Browerville HS
CANTON--Canton HS
CHISHOLM--Chisholm SHS
CIRCLE PINES--Centennial HS
COMFREY--Comfrey Public School
DULUTH--Hermantown J-SHS
EAST GRAND FORKS--Central HS
FERGUS FALLS--Fergus Falls SHS
FOREST LAKE--Forest Lake HS
FROST--Frost HS
GAYLORD--Gaylord HS
GLEN LAKE--Hennepin County Home School for Boys
GOODHUE--Goodhue HS
GOOD THUNDER--Good Thunder HS
HAWLEY--Hawley HS
IONA--St. Columba HS
LE CENTER--Le Center HS
MINNEAPOLIS--Minnehaha Academy
ONAMIA--Onamia HS
OWATONNA--Owatonna SHS
PAYNESVILLE--Paynesville HS
REMER--Remer HS
ROLLINGSTONE--Holy Trinity HS

MISSISSIPPI

ABERDEEN--Aberdeen HS
BROOKLYN--Forest County Ag. HS
CANTON--Holy Child Jesus HS
DECATUR--C. H. Boler HS
HAZLEHURST--Hazlehurst HS
LAUREL--George S. Gardiner HS
LOUISVILLE--Nanih Waiya HS
LULA--Lula-Rich Consolidated HS
MIZE--Mize HS
PERKINSTON--Jim Broom Memorial HS
SANDERSVILLE--Sandersville HS
SENATOBIA--Senatobia HS
SHANNON--Shannon HS
SUMRALL--Sumrall HS
UNIVERSITY--University HS
VICKSBURG--St. Aloysius HS

MISSOURI

ALMA--Alma HS
AUGUSTA--Augusta HS
BERNIE--Bernie HS
BEVIER--Bevier HS
BOWLING GREEN--Bowling Green HS
CONCORDIA--Concordia HS
GALLATIN--Gallatin HS
GLENCOE--La Salle Institute
GOWER--Gower HS
GRANBY--Granby HS
GREENFIELD--Greenfield HS
INDEPENDENCE--St. Mary's HS
KANSAS CITY--East HS
Northeast HS
KINLOCH--Kinloch HS
LEE'S SUMMIT--Lee's Summit HS
LEOPOLD--Leopold R-3 HS
LIBERTY--Liberty HS
LILBOURN--Lilbourn HS
MAPLEWOOD--Maplewood-Richmond Hts. HS
OAK RIDGE--Oak Ridge (R-6)
ST. ANN--Pattonville HS
STE. GENEVIEVE--Ste. Genevieve Public HS
ST. JOSEPH--Christian Brothers HS
ST. LOUIS--Academy of the Sacred Heart
SALISBURY--Salisbury HS (R-10)
TUSCUMBIA--Tuscumbia HS
UNIONVILLE--Unionville HS
UNIVERSITY CITY--University City HS
WASHBURN--Southwest HS

MONTANA

ANACONDA--Anaconda HS
BILLINGS--Billings HS
CUT BANK--Cut Bank HS
GARDINER--Gardiner HS
LAVINA--Lavina HS
LIBBY--Libby HS
THOMPSON FALLS--Thompson Falls HS

NEBRASKA

BRADY--Brady HS
CAMPBELL--Campbell HS
CRAWFORD--Crawford HS
CRESTON--Creston HS
CROFTON--Crofton HS
ELSIE--Elsie HS
GRAND ISLAND--Central Catholic HS
HEBRON--Hebron HS
LINCOLN--Lincoln HS
LOUP CITY--Loup City HS
NORTH PLATTE--St. Patrick's HS
OMAHA--Omaha Tech. HS
OSHKOSH--Garden County HS
PENDER--Pender HS
PILGER--Pilger HS
PRIMROSE--Primrose HS
WALLACE--Wallace HS

NEVADA

LAS VEGAS--Bishop Gorman HS
Las Vegas HS

NEW HAMPSHIRE

ALTON--Alton HS
GREENFIELD--Crotched Mountain School
HANOVER--Hanover HS
MANCHESTER--Bishop Bradley HS
ROCHESTER--Spaulding HS

NEW JERSEY

BLACKWOOD--Mother of the Savior Seminary
BURLINGTON--St. Mary's Hall
DUNELLEN--Dunellen HS
EAST ORANGE--Clifford J. Scott HS
GARFIELD--Garfield HS
JERSEY CITY--St. Mary HS
MONTCLAIR--Montclair Academy
NEW BRUNSWICK--Middlesex County Voc. and Tech. HS
NEWARK--St. Michael HS
TENAFLY--Tenafly HS
TRENTON--Hamilton HS West
Villa Victoria Academy
WOODSTOWN--Woodstown HS

NEW MEXICO

ALBUQUERQUE--Academy for Boys
Pius X Catholic HS
BELEN--Belen SHS
JAL--Jal HS
LOGAN--Logan Municipal HS
MELROSE--Melrose HS
OJO CALIENTE--Ojo Caliente HS

NEW YORK

AMENIA--Barlow School
AMITYVILLE--Queen of the Rosary Academy
AUBURN--West HS
AU SABLE FORKS--Au Sable Forks Central Rural School
BALDWIN--Baldwin HS
BRASHER FALLS--St. Lawrence Central School
BUFFALO--Mt. Saint Mary Academy
CATO--Cato-Meridian Central School
CHAMPLAIN--St. Mary's Academy
CHATEAUGAY--Chateaugay Central School
CLYDE--Clyde Central School
DELEVAN--Delevan-Machias Central School
DUNKIRK--Dunkirk HS
ELBRIDGE--Elbridge Central School
FOREST HILLS--Kew Forest School
FORT PLAIN--Fort Plain HS
GREENE--Greene HS
GREENVILLE--Greenville Central School
GUILDERLAND CENTER--Guilderland Central HS
HAMBURG--Hamburg Central HS
HAMILTON--Hamilton Central School
JAMAICA--Jamaica Voc. HS
Thomas A. Edison Voc. HS
Woodrow Wilson Voc. HS
JOHNSON CITY--John City HS
MANHASSET--St. Mary's HS
MORAVIA--Moravia Central HS
NEW YORK CITY
BRONX--Bronx HS of Science
Bronx Voc. HS
Christopher Columbus HS
DeWitt Clinton HS
Evander Childs HS
Grace H. Dodge Voc. HS
James Monroe HS
Jane Addams Voc. HS
Morris HS
St. Helena's HS
Samuel Gompers Voc. and Tech. HS
Theodore Roosevelt HS
Walton HS
William H. Taft HS
BROOKLYN--Abraham Lincoln HS
Alexander Hamilton Voc. HS
Bay Ridge HS
Boys HS
Brooklyn HS of Automotive Trades
Brooklyn Tech. School
Bushwick HS
Clara Barton Voc. HS
East New York Voc. HS
Eastern District HS

Eli Whitney Voc. HS
Erasmus Hall HS
F. K. Lane HS
Fort Hamilton HS
George W. Wingate HS
George Westinghouse Voc. and Tech. HS
Girls HS
James Madison HS
John Jay HS
Lafayette HS
Midwood HS
New Utrecht HS
Prospect Heights HS
Samuel J. Tilden HS
Sarah J. Hale Voc. HS
Sheepshead Bay HS
Thomas Jefferson HS
William E. Grady Voc. HS
William H. Maxwell Voc. HS

MANHATTAN--Benjamin Franklin HS
Central Coml. HS
Charles E. Hughes HS
Chelsea Voc. HS
Food Trades Voc. HS
George Washington HS
Haaren HS
HS of Commerce
HS of Fashion Industries
HS of Music and Arts
Julia Richman HS
Loyola School
Mabel Dean Bacon Voc. HS
Machine and Metal Trades Tech. and Voc. HS
Metropolitan Voc. HS
New York School of Printing
Rhodes Prep. School
Rice HS
Seward Park HS
Stuyvesant HS
The HS of Art and Design
Washington Irving HS
Yorkville Voc. HS

QUEENS--Andrew Jackson HS
Aviation HS
Bayside HS
Far Rockaway HS
Flushing HS
Forest Hills HS
Grover Cleveland HS
Jamaica HS
John Adams HS
Long Island City HS
Martin Van Buren HS
Newtown HS
Queens Voc. HS
Richmond Hill HS
William C. Bryant HS

RICHMOND--Curtis HS
New Dorp. HS
Port Richmond HS
Ralph R. McKee Voc. and Tech. HS
Tottenville HS

NIAGARA FALLS--Madonna HS
Trott Voc. HS

OSSINING--Mary Immaculate School

OTEGO--Otego Central School

PHILADELPHIA--Indian River Central HS

PORT WASHINGTON--Paul D. Schrieber HS

ROCHESTER--St. Andrews Seminary

SAVANNAH--Savannah HS

SCHOHARIE--Schoharie Central School

STRAATSBURG-ON-HUDSON--The Anderson School

SYRACUSE--Cathedral Academy

TARRYTOWN--Our Lady of Victory Academy

WALLKILL--Wallkill Central HS

WARSAW--Warsaw HS

WESTPORT--Westport Central School

YONKERS--Elizabeth Seton School

NORTH CAROLINA

ALBEMARLE--Endy HS

ASHEVILLE--St. Genevieve-of-the-Pines Academy
Biltmore HS
Plonk School of Creative Arts

BELMONT--Belmont

CAMERON--Cameron HS

CHADBOURN--Chadbourn HS

CLAYTON--Cleveland HS

DENTON--Denton HS

GASTONIA--Highland HS

GREENSBORO--Bessemer HS
Page HS

HILLSBORO--Hillsboro HS

LENOIR--Freedman HS
Kings Creek HS

LOUISBURG--Franklin Training School

LUMBERTON--Lumberton HS

MARSHVILLE--Marshville HS

MONROE--Union HS
Monroe HS

NEWTON GROVE--Hobbton HS

NORLINA--Norlina HS

PINE HALL--Pine Hall HS

PRINCETON--Princeton HS

RALEIGH--J. W. Ligon HS

ROPER--Washington County Un. HS

SHALLOTE--Union HS

SKYLAND--Valley Springs HS

SMITHFIELD--Smithfield HS

STANFIELD--Ridgecrest HS

SUMMERFIELD--Laughlin HS

TROY--Peabody HS

VALE--Union HS

WALNUT--Walnut HS

WASHINGTON--P. S. Jones HS

WINGATE--Wingate College HS

NORTH DAKOTA

FORBES--Forbes HS

GLENFIELD--Glenfield Public HS

HANKINSON--Hankinson HS

HAYNES--Haynes HS

KLOTEN--Kloten HS

PLAZA--Plaza HS

WAHPETON--Wahpeton Central HS

OHIO

AKRON--East HS

BLOOMDALE--Elmwood HS

CANTON--J. H. Lehman HS

CARROLLTON--Carrollton HS

CENTERBURG--Centerburg Local HS

CLEVELAND--Cuyahoga Heights HS
Holy Name HS
Mayfield HS
St. Peter HS

COALTON--Coalton Local HS

COLUMBUS--College of St. Charles Borromeo
Hamilton Township HS

CONESVILLE--Conesville HS

COSHOCTON--Coshocton HS

DOVER--St. Joseph's HS

DOYLESTOWN--Chippewa HS

EUCLID--Euclid SHS

FRANKFORT--Frankfort HS

GETTYSBURG--Gettysburg HS

GREEN CAMP--Green Camp HS

GREEN SPRINGS--Green Springs HS

GREENHILLS--Greenhills HS

HARTVILLE--Lake HS

HOWARD--Howard HS

HURON--Huron HS

KINGSTON--Saltcreek Township HS

LEAVITTSBURG--Warren Township Local HS

LEES CREEK--Simon Kenton HS

LODI--Cloverleaf HS

LUCASVILLE--Valley Local HS

MANSFIELD--Mansfield SHS

NEW STRAITSVILLE--New Straitsville HS

NEWARK--Newark Catholic HS

NORTH CANTON--Hoover HS

NORTH ROYALTON--North Royalton HS

OSTRANDER--Scioto Valley HS

PAINESVILLE--Riverside HS

PEEBLES--Peebles Local HS

RICHWOOD--Richwood HS

SANDUSKY--St. Mary HS

SHAKER HEIGHTS--Laurel HS

STRONGSVILLE--Strongsville HS

TOLEDO--Ottawa Hills HS

TONTOGANY--Otsego HS

WADSWORTH--Wadsworth HS

WEST JEFFERSON--Jefferson Local HS

WEST LAFAYETTE--West Lafayette HS

YOUNGSTOWN--Chaney HS

OKLAHOMA

ALLEN--Allen J-SHS

ANADARKO--Riverside Indian School

CHEROKEE--Lambert HS

CHICKASHA--Friend HS

COMMERCE--Commerce HS

DALE--Dale HS

DOVER--Dover HS

ENID--Enid HS

FREDERICK--Boyd HS

GUYMON--Guymon HS

KANSAS--Kansas J-SHS

MARLAND--Marland HS
NOWATA--Nowata HS
OKLAHOMA CITY--Putnam City HS
OOLOGAH--Oologah HS
PURCELL--Purcell HS
RAVIA--Ravia HS
SEMINOLE--Varnum HS
SHAWNEE--St. Gregory's HS
THOMAS--Thomas J-SHS
TULSA--Will Rogers HS
VANOSS--Vanoss Public School
WILBERTON--Wilberton HS

OREGON

COLTON--Colton HS
EUGENE--Willamette HS
GERVAIS--Gervais Union HS
MEDFORD--Rogue River Junior Academy
PENDLETON--Pendleton HS
PORTLAND--Washington HS
SALEM--Sacred Heart Academy
SISTERS--Sisters HS
VERNONIA--Vernonia HS
WALDPORT--Waldport HS

PENNSYLVANIA

ALEXANDRIA--Juniata Valley HS
BARNSBORO--Barnsboro HS
BEAVER FALLS--Beaver Falls Area HS
BROCKWAY--Brockway Area HS
BROOKVILLE--Brookville Area Joint HS
CARNEGIE--Carnegie HS
CLARION--Clarion Joint J-SHS
CLIFTON HEIGHTS--Clifton Heights HS
COALPORT--Beccaria-Coalport-Irvona Joint SHS
COLUMBIA--St. Joseph's Academy
COMMODORE--Purchase Line Joint HS
COOPERSBURG--Southern Lehigh Union HS
DALLASTOWN--Dallastown Area Joint HS
EAST SMITHFIELD--Smithfield Ridgeby Ulster Joint HS
EDDYSTONE--Eddystone SHS
ERIE--Lawrence Park Township HS
EVERETT--Everett-Southern Joint HS
FISHERTOWN--Chestnut Ridge Joint HS
HAMBURG--Hamburg HS
HOUSTON--Chartiers Houston Joint HS
KINGSTON--Wyoming Seminary
LANCASTER--J. P. McCaskey HS
LUCINDA--St. Joseph's HS
MAHANOY CITY--Mahanoy Area HS
MONACA--Monaca Boro SHS
MONROEVILLE--Gateway SHS
NEFFSVILLE--Mannheim Township HS
NORTH BRADDOCK--Scott SHS
NORTH EAST--St. Mary's College
OAKMONT--Oakmont Boro HS
PENFIELD--Huston Township HS
PHILADELPHIA--The William Penn HS
South Philadelphia HS
PITTSBURGH--St. Elizabeth HS
South Hills Catholic HS
South Voc. HS
Westinghouse HS
RIDLEY PARK--Ridley Park HS
ROGERSVILLE--West Greene HS
SCHUYLKILL HAVEN--Schuylkill Haven Area Joint HS
SCRANTON--St. Paul HS
SHAMOKIN--Shamokin Area Joint HS
SPANGLER--Northern Cambria Joint HS
SWIFTWATER--Pocono Mt. Joint HS
TOWNVILLE--Townville Joint HS
VERONA--Verona HS
WILKES-BARRE--Hanover Township Mem. HS
Marymount HS

RHODE ISLAND

PROVIDENCE--Central SHS
WAKEFIELD--South Kingstown SHS

SOUTH CAROLINA

ABBEVILLE--Wright HS
BLACKVILLE--Blackville HS
CLOVER--Clover HS
DARLINGTON--St. John's HS
EASTOVER--Webber HS
GREELEYVILLE--County Trade School
GREENWOOD--Greenwood HS
LANCASTER--Lancaster SHS
MADISON--Cleveland HS
MARION--Marion HS
SUMTER--Lincoln JS
Mayewood HS
TAMASSEE--Tamassee DAR HS
WELLFORD--Florence Chapel HS
WHITMIRE--Whitmire HS

SOUTH DAKOTA

BERESFORD--Beresford HS
BRANDT--Brandt HS
DOLAND--Doland HS
MARTIN--Bennett County HS
NEW HOLLAND--Dakota Christian HS
RAPID CITY--Cathedral HS
REDFIELD--Redfield HS
SCOTLAND--Scotland HS
SELBY--Selby HS
VIBORG--Viborg HS
WITTEN--Witten HS

TENNESSEE

BEECH BLUFF--Beech Bluff HS
BULLS GAP--Bulls Gap HS
CHATTANOOGA--The McCallie School
DANDRIDGE--Maury HS
DUNLAP--Sequatchie County HS
FOUNTAIN CITY--Halls HS
GOODLETTSVILLE--Goodlettsville HS
HARRIMAN--South Harriman HS
KNOXVILLE--Young HS
LENOIR CITY--Lenoir City HS
LOUDON--Loudon County HS
LYNNVILLE--Jones HS
McMINNVILLE--McMinnville City HS
RAMER--Ramer HS
SHARON--Sharon HS
SPEEDWELL--Powell Valley HS
TIPTONVILLE--Tiptonville HS
TRIMBLE--Trimble City HS
TYNER--Tyner HS
WOODBURY--Central HS

TEXAS

ANTON--Anton HS
ARCHER CITY--Archer City HS
ASPERMONT--Aspermont HS
BEAUMONT--St. Anthony's HS
BRIDGEPORT--Bridgeport HS
CANADIAN--Canadian HS
CHANNELVIEW--Channelview HS
CLEVELAND--Tarkington HS
DALLAS--Thomas Jefferson HS
DETROIT--Detroit HS
EL CAMPO--El Campo HS
EL PASO--Lydia Patterson Institute
FLUVANNA--Fluvanna HS
FORT WORTH--C. F. Brewer HS
GAINESVILLE--Gainesville HS
GALVESTON--Ursuline Academy
GARRISON--Garrison Colored HS
GRAND SALINE--Grand Saline HS
GREGGTON--Pine Tree HS
HAMSHIRE--Hamshire HS
HARDIN--Hardin HS
HONDO--Hondo HS
IRA--Ira HS
LA VERNIA--La Vernia HS
LEONA--Leona HS
LITTLEFIELD--Littlefield HS
LUBBOCK--Tom S. Lubbock SHS
MAPLE--Three Way HS
MINERAL WELLS--Mineral Wells HS
NAVASOTA--Navasota HS
NEEDVILLE--Needville HS
OVERTON--Leveretts Chapel HS
PEARSALL--Pearsall HS

PORT ARTHUR--Sacred Heart HS
Thomas Jefferson HS

QUEEN CITY--Queen City HS

RAYMONDVILLE--Raymondville HS

REDWATER--Redwater HS

SAN ANTONIO--Peacock Military Academy
Thomas Jefferson HS

SEAGOVILLE--Seagoville HS

SOUTH HOUSTON--South Houston HS

STINNETT--Stinnett HS

TEMPLE--Academy HS

TRENT--Trent HS

TUSCOLA--Jim Ned HS

VAN--Van HS

WACO--Catholic HS

WAXAHACHIE--Turner HS

WEIMAR--Karl Downs HS

WEINERT--Weinert HS

UTAH

CIRCLEVILLE--Piute HS

MONROE--South Sevier HS

MT. PLEASANT--Wasatch Academy

OREM--Orem HS

RICHMOND--North Cache HS

VERMONT

MANCHESTER--Burr and Burton Seminary

MILTON--Milton HS

MONTPELIER--St. Michael's HS

NEWBURY--Newbury HS

WATERBURY--Waterbury HS

VIRGINIA

ALEXANDRIA--George Washington HS

AMELIA COURT HOUSE--Amelia HS

CHARLOTTE COURT HOUSE--Randolph Henry HS

EASTVILLE--Northampton HS

FIELDALE--Fieldale HS

GOODVIEW--Stewartsville HS

KING WILLIAM--King William HS

LYNN HAVEN--Princess Anne HS

NORA--Ervinton HS

NORFOLK--Granby HS

PORTSMOUTH--St. Paul's Central HS

PULASKI--Pulaski HS

STANLEY--Stanley HS

STAUNTON--Staunton Military Academy

TAPPAHANNOCK--Essex County HS

WEST POINT--West Point HS

WASHINGTON

EAST STANWOOD--Cedar Home SDA School

KIRKLAND--Lake Washington SHS

LAKE STEVENS--Lake Stevens HS

LANGLEY--Langley HS

MONROE--Monroe HS

OAKVILLE--Oakville HS

PUYALLUP--Puyallup HS

ST. JOHN--St. John HS

SPOKANE--Bishop C. D. White Prep. School
Gonzaga Prep. School

SPANGLE--Upper Columbia Academy

WILBUR--Wilbur HS

YAKIMA--A. C. Davis SHS

WEST VIRGINIA

CHARLES TOWN--Charles Town HS

ELIZABETH--Wirt County HS

MONTCOAL--Marsh Fork HS

MONTGOMERY--Montgomery HS

PARKERSBURG--Parkersburg Catholic HS

PINE GROVE--Pine Grove HS

QUINWOOD--Crichton HS

SMOOT--Smoot HS

WAR--Big Creek HS

WHEELING--Warwood HS

WILLIAMSON--Williamson HS

WISCONSIN

BEAVER DAM--Beaver Dam SHS

CLEAR LAKE--Joint HS, District No. 1

DURAND--Durand HS

GREEN BAY--Our Lady of Charity HS

KENOSHA--Kemper Hall

LADYSMITH--Ladysmith HS

LODI--Lodi HS

MADISON--Madison East SHS

MARKESAN--Markesan HS

MILWAUKEE--Mercy HS
North Division HS
St. John's Cathedral HS
South Division HS

MINERAL POINT--Mineral Point HS

OAKFIELD--Oakfield HS

ONTARIO--Ontario HS

PRAIRIE DU SAC--Prairie Du Sac HS

PRESCOTT--Prescott HS

ROSENDALE--Union HS

SALEM--Central Union HS

SOLON SPRINGS--St. Croix HS

TREMPEALEAU--Trempealeau HS

WEST ALLIS--West Milwaukee HS

WYOMING

GREEN RIVER--Green River HS

SUNRISE--Sunrise HS